

***United States Court of Appeals
for the Second Circuit***



**INTERVENOR'S
BRIEF**

77-4157

IN THE
United States Court of Appeals
FOR THE SECOND CIRCUIT

NATURAL RESOURCES DEFENSE COUNCIL, INC.,
Petitioner,

v.

UNITED STATES NUCLEAR REGULATORY
COMMISSION and UNITED STATES OF AMERICA,
Respondents,

POWER AUTHORITY OF THE STATE OF NEW YORK,
et al., AMERICAN ELECTRIC POWER COMPANY,
et al., BOSTON EDISON COMPANY, *et al.*,
PENNSYLVANIA POWER & LIGHT COMPANY,
Intervenors.

On Petition for review of
an Order of the
Nuclear Regulatory Commission

**CONSOLIDATED BRIEF OF CERTAIN OF THE
INTERVENORS OPPOSING
NRDC REVIEW PETITION**

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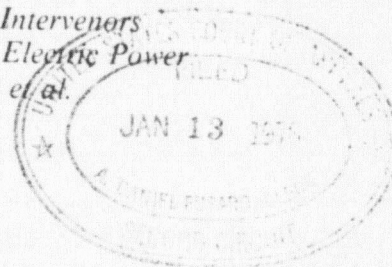


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FOR THE SECOND CIRCUIT

NATURAL RESOURCES DEFENSE COUNCIL, INC.,	)	
	)	
Petitioner,	)	
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v.	)	
	)	
UNITED STATES NUCLEAR REGULATORY COMMISSION	)	
and UNITED STATES OF AMERICA,	)	No. 77-4157
	)	
Respondents,	)	
	)	
POWER AUTHORITY OF THE STATE OF NEW YORK,	)	
<u>et al.</u> , AMERICAN ELECTRIC POWER COMPANY,	)	
<u>et al.</u> , BOSTON EDISON COMPANY, <u>et al.</u> ,	)	
PENNSYLVANIA POWER & LIGHT COMPANY,	)	
	)	
Intervenors.	)	

CONSOLIDATED BRIEF OF CERTAIN OF THE INTERVENORS
OPPOSING NRDC REVIEW PETITION

I. Preliminary Statement

This brief is filed on behalf of 30 of the electric utility intervenors involved in this appeal.^{*/} Each utility intervenor is the holder of one or more operating licenses, construction permits or limited work authorizations, or is an applicant before the Nuclear

^{*/}

They are: American Electric Power Co., Baltimore Gas & Electric Co., Boston Edison Co., Consumers Power Co., Duquesne Light Co., Jersey Central Power & Light Co., Kansas City Power & Light Co., Kansas Gas & Electric Co., Long Island Lighting Co., Madison Gas & Electric Co., Metropolitan Edison Co., Northeast Nuclear Energy Co., Northern States Power Co., Ohio Edison Co., Pacific Gas & Electric Co., Pennsylvania Power & Light Co., Philadelphia Electric Co., Public Service Electric & Gas Co., Southern California Edison Co., The Cleveland Electric Illuminating Co., The Connecticut Light & Power Co., The Hartford Electric Light Co., The Toledo Edison Co., Union Electric Co., Virginia Electric & Power Co., Western Massachusetts Electric Co., Wisconsin Electric Power Co., Wisconsin Power & Light Co., Wisconsin Public Service Corp., and Yankee Atomic Electric Corp.

Regulatory Commission ("Commission") for these licenses, permits or authorizations. Collectively, the utility intervenors represent nuclear power reactors in operation, or in various stages of the licensing process, having a capacity in excess of 100,000 megawatts (thermal); the aggregate investment in the construction and operation of these plants constitutes many billions of dollars.

The petition for rulemaking filed below by the Natural Resources Defense Council ("NRDC") sought, inter alia, an order from the Commission to refrain from granting any pending or future applications for reactor operating licenses until such time as the Commission concludes a rulemaking proceeding and, on the basis of that rulemaking, determines definitively that radioactive wastes generated in nuclear power reactors can be disposed of permanently without undue risk to the public health and safety.^{1/} The Commission quite correctly found that the requested safety finding was neither compelled by statute or regulation nor otherwise warranted at this time.^{2/} Because reasonable progress towards the development of permanent disposal facilities is being accomplished, the Commission considered it to be inappropriate to declare a moratorium on the licensing of nuclear power plants.^{3/}

If this Court were to reverse the Commission's decision and accord the NRDC the relief it has requested (see Pet. Br. at 48), the timely operation of nuclear power reactors in this country would

^{1/} See R. at 17. Record references are to the Certified Index of the Administrative Record prepared by the Commission and filed with this Court on September 23, 1977.

^{2/} See R. at 508.

^{3/} See R. at 509, 518-22.

obviously be imperiled, and the interests of these utility intervenors, their customers and shareholders would be directly and adversely affected. The Commission was certainly mindful of these concerns in its evaluation of the need at this time for a definitive determination of the manner in which waste materials will be disposed of permanently. It properly concluded that for the present the safety concerns associated with long-term waste disposal problems were not such, given the ongoing measures being taken and the congressional attention being given to the problem, as to warrant a significant curtailment of further nuclear reactor licensing activity. That decision is well reasoned and entitled to full respect by this Court.

II. Statement of the Issues

1. Whether the Commission properly concluded, on the basis of its "reasonabl[e] confiden[ce] that permanent disposal [of commercially generated, high-level radioactive wastes] * * * can be accomplished safely when it is likely to become necessary," that a definitive finding on waste disposal at this time is neither necessary nor appropriate.

2. Whether the Commission properly concluded, in light of ongoing technical and regulatory programs designed to dispose safely of commercially generated, high-level radioactive wastes, and in recognition of the long and continuing history of congressional oversight on the progress of those programs, that there is a "reasonable basis for continued licensing of facilities whose operation will produce nuclear wastes".

3. Whether the public interest will be served by a moratorium on the further licensing of nuclear power plants at this time.

III. Statement of the Case

NRDC's petition for review was filed with this Court on August 25, 1977. Motions for leave to intervene were filed on September 23 and November 18, 1977; intervention was granted by Orders of the Court dated October 3 and November 30, 1977. Because the "Statement of the Case" set forth in NRDC's Appeal Brief fails in a number of material respects to apprise this Court fully of the underlying factual basis on which the Commission's decision was premised and gives no recognition to a significant portion of the administrative record developed below, it is necessary for Intervenor to supplement NRDC's Statement in a number of respects before addressing the legal arguments that have been made.

A. THE UNDERLYING OBJECTION OF NRDC IS WITH THE TIMING AND NATURE OF THE SAFETY ASSESSMENT MADE BY THE COMMISSION BELOW.

Intervenor is admittedly at odds with NRDC in our understanding of the import of the Commission's denial of the request for rulemaking on the matter in question. We believe that the Commission, quite properly, decided only that now is not an appropriate time for a definitive safety finding on radioactive waste disposal to be made by this agency, as had been requested by NRDC. This determination was based both on the statutory requirements of the Atomic Energy Act ("AEA") and the Energy

Reorganization Act ("ERA"), as well as on the Commission's knowledgeable assessment that it presently has reasonable assurance it will be able to make an affirmative safety finding when the appropriate time comes to do so. Thus, we do not understand the Commission to have either exempted waste disposal from its safety obligations (compare Pet. Br. at 3, 38, 43-44), or attempted to hide the legal and factual bases of its decision from NRDC or from judicial review (compare Pet. Br. at 30-33).

Nor is the disposition reached below unique to agency decision-making or foreign to this Court. In fact, the denial of rulemaking in the present circumstances parallels in many respects the similar action taken by an agency upon deciding not to prepare an environmental impact statement, when it issues an announcement of that decision and sets forth therein the basis for its negative conclusion. Here, the Commission rightfully determined that the applicable statutes and regulations did not require it to make the requested safety finding. In so concluding, it took a "hard look" at the present state of waste disposal technology as accurately reflected in the technical record introduced below -- which was far more voluminous than NRDC has portrayed. All the relevant areas of concern were identified by the Commission and it made a "convincing case" that, as to the problems under study, present waste disposal technology is sufficient to provide reasonable assurance that there is no legitimate need for alarm as to the public health and safety with regard to this matter

now or in the foreseeable future.^{4/} A more complete examination of the record than the backward glance taken by NRDC will fully confirm that assessment of the current situation.

B. THERE EXISTS A SUCCESSFUL, ONGOING FEDERAL PROGRAM TO DISPOSE SAFELY OF COMMERCIALY GENERATED, HIGH-LEVEL RADIOACTIVE WASTES.

The seeds of doubt which NRDC has endeavored to sow depend largely on its conclusory remark that "there is no guarantee that the federal government can or will ever develop a safe, permanent waste disposal facility" (Pet. Br. at 14).^{5/} So pessimistic an

^{4/} Cf. Maryland-National Capital Park & Planning Commission v. United States Postal Service, 487 F.2d 1029, 1039-40 (D.C. Cir. 1973); McDowell v. Schlesinger, 404 F. Supp. 221, 250 (W.D. Mo. 1975).

^{5/} See also Pet. Br. at 1 ("substantial doubts exist about whether safe disposal will ever be technically or politically feasible"). It is particularly interesting to compare the position espoused by NRDC in its Appeal Brief with testimony presented by NRDC before Congress. During hearings held in May 1977, Dr. Terry R. Lash, NRDC staff scientist, testified on the waste management question. See Nuclear Waste Management: Oversight Hearings Before the Subcomm. on Energy and the Environment of the House Comm. on Interior and Insular Affairs, 95th Cong., 1st Sess. 68 (1977) (hereinafter "1977 Hearings"). In response to questioning by Representative Ruppe, the following colloquy occurred (id. at 78; emphasis added):

Mr. Ruppe. The gentleman that testified yesterday -- I think it was Dr. Hebel [Chairman, American Physical Society Study Group on Nuclear Fuel Cycles and Waste Management] -- indicated that disposal technologies were available. I thought he said it was a question of deciding what technology we wanted to employ in going ahead [see id. at 15], obviously using all necessary safeguards. I thought he referred to the technological capabilities within the state of the scientific community of this country. Would you be inclined to agree with that statement?

Dr. Lash. I would be inclined to agree with it, but I would also state there are uncertainties about the

(Continued next page)

appraisal of the present waste management program is difficult to understand, even if one were to confine himself to a selective reading of only those few, isolated portions of the record below on which NRDC has chosen to rest its case. Certainly, no such gloomy outlook is suggested upon a review of the record as a whole. Both the voluminous submission to the Commission in connection with the subject rulemaking petition, and the extensive record that has been compiled by Congress in its continuing efforts to choose the best solution to this technical problem, end on the extremely positive note that a safe and relatively inexpensive program to dispose of commercially generated, high-level radioactive wastes is being developed and will be put into operation when needed.

1. High-level radioactive wastes. The nuclear fuel cycle includes a number of discrete elements, most of which generate radioactive wastes in one form or another. The fuel cycle is typically described as including (a) mining and milling, (b) conversion to uranium hexafluoride (UF₆) gas, (c) enrichment, (d) fuel

5/ (Continued)

behavior of radioactive waste in geologic formations, particularly when you have high thermal heat generated by these wastes. While there is no evidence to my knowledge that says in principle you cannot safely dispose of wastes, there are some uncertainties and those have to be explored.

But I would tend to agree with the statement as you made it.

Dr. Lash went on to state that he did not even view the issue of radioactive waste disposal as the biggest challenge facing nuclear power (id. at 78).

fabrication, (e) reactor operation, (f) spent fuel storage, (g) reprocessing, and (h) disposal.^{6/} The NRDC review petition raises questions only as to the radioactive wastes generated in connection with the "back end" of the fuel cycle, i.e., activities after fuel irradiation during reactor operation. The exact form which such waste materials will take depends on certain fuel cycle decisions that have not yet been made. For example, unless the United States government ultimately decides to permit reprocessing of spent fuel, the commercial reactor program will not produce additional high-level liquid wastes (see n.11, infra). Conversely, if reprocessing does occur, it will be unnecessary to provide for the permanent disposal of spent fuel rods.

Uncertainties of this sort have not, however, deterred the formulation and development of constituent parts of a comprehensive waste disposal program (see Figure 1, attached as an Appendix hereto). Such an effort, as more thoroughly examined at pages 12-27, infra, has been ongoing in this country since the advent of the nuclear age in full recognition of the obvious fact that radioactive wastes must be carefully handled and processed. Due to the toxicity and exceedingly long half-life (decay period) of certain components of radioactive wastes, they require positive isolation from the biosphere for extended periods in locations of high containment integrity so as to minimize the possibility of release of significant quantities of radioactivity into the environment.

^{6/} For more complete descriptions of the light water reactor fuel cycle, see R. at 576-91, 3113-25.

The need for such precautionary measures is, of course, not confined to the commercial nuclear power industry. The generation of high-level radioactive wastes has for some time been a necessary by-product of this country's defense programs, and in significantly larger amounts than in the private sector.^{7/} This realization understandably has provided strong impetus to the federal government to fund research for, and to implement large-scale operation of, safe methods of waste disposal.^{8/} Moreover, the experience gained over the past 30 years from managing the present volume of military wastes not only provides direct empirical evidence that no undue risk is being incurred from the present and continued operation of

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In comparison to the small amounts of commercially generated high-level wastes anticipated (see n.11, *infra*), the military program already has produced 25 times more waste than would be accumulated by commercial power reactors through the year 2000. See Storage and Disposal of Radioactive Waste: Hearings Before the Joint Comm. on Atomic Energy, 94th Cong., 1st Sess. 20 (1975) (hereinafter "1975 Hearings") (testimony of Frank P. Baranowski, ERDA). It is estimated that existing military programs already have generated wastes which, if solidified, would be equivalent in volume to a cube 200 feet on each side. See M. Willrich and R. K. Lester, Radioactive Waste Management and Regulation 15 (1977) (Note: The Willrich and Lester book is a published version of the draft report attached to the NRDC rulemaking petition before the Commission (see R. at 145-32)).

NRDC, while ignoring the significant volumetric disparity between military and commercial wastes, argues that, when measured by radioactivity, the commercial sector will produce significant quantities of wastes (see Pet. Br. at 8). The large increases cited by NRDC are only a reflection of the very small quantities of commercially generated wastes presently stored. Despite the fact that commercially generated wastes will contain more fission products per unit volume than military wastes, the radioactivity of commercially generated wastes will not reach the present level of radioactivity stored in military wastes until the 1990's. See R. at 178; Willrich & Lester, *supra*, at 15. Thus, even by NRDC's own index of significance, commercially generated wastes will constitute only a small fraction of this country's existing and near-term radioactive waste disposal inventory.

8/

See, e.g., ERDA, Nuclear Fuel Cycle: A Report by the Fuel Cycle Task Force, ERDA-33, at 46 (March 1975).

nuclear power reactors,^{9/} but also supports the Commission's determination that permanent disposal of commercially generated wastes can be accomplished safely when the need arises.

It is with this background knowledge that we now turn to an examination of the technical programs to which the Commission made reference and which are currently underway for developing safe, long-term disposal techniques for radioactive wastes. The regulatory efforts to implement these technical advances will then be discussed, followed by a brief look at the history of congressional oversight in this important area.

Preliminarily, it should be emphasized that the problems presented by the waste disposal issue have provided the scientific community in this country with a challenging, but (contrary to the doomsday prophecies of NRDC (Pet. Br. at 1, 7-8)), by no means impossible assignment. In this regard, both in terms of the toxicity of the wastes generated,^{10/} and in terms of the quantity

^{9/} The management of military wastes has not always been error free. See, e.g., General Accounting Office, Nuclear Energy's Dilemma: Disposing of Hazardous Radioactive Waste Safely, 39-50 (Sept. 9, 1977) (hereinafter "1977 GAO Report"); General Accounting Office, Isolating High-Level Radioactive Waste From the Environment: Achievements, Problems and Uncertainties 8-24 (Dec. 18, 1974) (hereinafter "1974 GAO Report"). However, no health or safety hazard has resulted during the storage of such wastes. Id. Moreover, the experience gained from the long-term tank storage of liquid high-level radioactive wastes enabled the Commission to determine that such storage techniques would not be acceptable for the disposal of commercial wastes and to promulgate regulations to that effect. See 35 Fed. Reg. 17530 (Nov. 11, 1970); 10 C.F.R. Part 50, App. F.

^{10/} The following description of the radioactive wastes generated is taken from the prepared testimony of E. R. Johnson presented to the Senate Committee on Governmental Affairs (see Department of Energy Organization Act: Hearings on S. 826 & S. 591 Before the Senate Comm. on Governmental Affairs, 95th Cong., 1st Sess. 900 n.2 (1977)):

There are two principal types of constituents of this

(Continued next page)

of waste material that must be handled,^{11/} the concerns raised have been neither unique nor insoluble in our modern technological society. This is not to downplay their importance. But neither is it appropriate, as NRDC has seen fit to do, to overstate ill-conceived dire consequences. A closer look at the ongoing waste disposal programs that helped to shape the Commission's

10/ (Continued)

waste which are of concern from a waste management standpoint: highly radioactive fission products (such as cesium-137 and strontium-90) which are external radiation hazards; and transuranium elements (such as plutonium) which are hazardous only if inhaled or ingested into the body. During the first 1000 years (or less) of isolation of the wastes, the fission products decay to harmless levels of radioactivity. However, the transuranium elements remain radiotoxic past the first millenium. By the time the wastes are isolated for about 3000 years, the concentration of the transuranium elements has been reduced to levels such that their radiotoxicity is equivalent to those of natural occurring uranium ore bodies.

11/

At the present time the commercial nuclear power industry has produced less than 600,000 gallons of high-level waste. All of this waste is in liquid form and is stored at West Valley, New York. Since much of this waste was generated during the processing of spent fuel from an AEC production reactor at Hanford, it should not all be categorized as "commercial" waste. See Willrich & Lester, supra n.7, at 14. The reprocessing plant at West Valley has been closed, and no new quantities of liquid high-level waste are being generated by the commercial nuclear power program. In comparison to the 200-foot cube of existing military wastes, ERDA estimates that between now and the year 2000 an equivalent cube attributable to the commercial nuclear power program would measure only 66 feet on each side (see R. at 3224). See also 1975 Hearings, supra n.7, at 13 ("the cumulative high-level waste from nuclear power in the year 2000 would fill a football field to a depth of about 8 feet * * *") (testimony of Baranowski).

decision below will perhaps provide the most realistic perspective.^{12/}

2. Technical programs. Present regulatory requirements specify that high-level liquid radioactive wastes generated in a fuel reprocessing plant must be converted to a Commission-approved solid form and transferred to a federal waste repository for final disposal.^{13/} The liquid waste can be stored at the fuel reprocessing plant for as long as five years before conversion to solid

^{12/} In this regard, the introductory remarks to a study of the waste disposal problem recently conducted by two recognized authorities in the field, Messrs. Willrich and Lester, articulate a well-reasoned approach to the matter at hand which bears repeating. Thus, these gentlemen observed (Willrich & Lester, supra, n.7 at xi):

Finally, the reader should bear in mind that we consider here a narrow, though important, problem which arises in a much larger context. The specific risks posed by radioactive waste must also be compared with the risks associated with other potential environmental pollutants. Although radioactive waste constitutes a potential radiological hazard for a very long period, other possible pollutants may be even more persistent or more dangerous or both. The risks posed by radioactive waste must also be balanced against the benefits to be derived from activities which produce the waste and the consequences if those activities were stopped. The security of the United States and its allies appears to rest in part on the U. S. nuclear deterrent, and the well-being of every society depends on adequate energy. The world urgently needs practical alternatives to fossil energy, and nuclear fission has been demonstrated to be a practical way to generate electricity.

^{13/} See 10 C.F.R. Part 50, App. F. The end-product dry solid is to be "chemically, thermally, and radiolytically stable to the extent that the equilibrium pressure in the sealed container will not exceed the safe operating pressure for that container during the period from canning through a minimum of 90 days after receipt (transfer of physical custody) at the Federal repository." Id.

form; shipment to the federal repository must be made within ten years after generation of the liquid waste. Implementation of this policy requires the development of three interrelated technologies: (a) conversion of liquid wastes into solid forms suitable for interim onsite storage; (b) safe transport of the solid waste from the reprocessing plant to the waste repository; and (c) disposal of the waste in selected deep geologic formations.^{14/}

This general concept of waste disposal was initially recommended in 1957 by the Committee on Radioactive Waste Disposal of the National Academy of Sciences - National Research Council ("NAS-NRC").^{15/} Since that time demonstrations of the technical feasibility of solidification, transport and geologic disposal have been carried out. We shall thus focus briefly on each of these three steps.

Solidification can be achieved by vitrifying the high-level liquid waste, that is, by converting the liquid waste to glass.^{16/} The potential for producing a durable glass waste form was recognized over twenty years ago.^{17/} Experimental work has verified that long-term exposure to high temperatures and radiation will

^{14/} See R. at 542, 3083; see also 35 Fed. Reg. 17530 (Nov. 14, 1970).

^{15/} See National Academy of Sciences - National Research Council, The Disposal of Radioactive Waste on Land: Report of the NRC Committee on Waste Disposal (Sept. 1957); see also R. at 800, 1217.

^{16/} See R. at 543, 609, 3311.

^{17/} Id.

not degrade the glass waste.^{18/} Moreover, the equipment for producing this waste form has been widely demonstrated.^{19/}

Typically, it involves a two-step process: calcination, or conversion of the liquid to an ashy substance by heat, followed by melting with a ceramic material to produce the desired glass. Development of the vitrification process has progressed to the point where Battelle's Pacific Northwest Laboratory at Hanford recently announced that it had begun operation of a plant capable of handling the waste from fifty power reactors.^{20/} It is anticipated that a full-scale plant will be in commercial operation by the 1980's.^{21/}

Following solidification, the high-level waste can be readily stored on an interim basis at the reprocessing plant prior to transportation to the federal repository.^{22/} Calcined wastes have

^{18/}
Id.

^{19/} Five different processes for solidification of radioactive wastes have been developed and demonstrated on an engineering scale: four in the United States and one in France. Various methods of drying and calcining the waste have been evaluated (see R. at 3289-3310), as have alternative methods to convert the resulting powder to glass or glass-like forms (see R. at 3311-38).

^{20/} See 18 Nucleonics Week, Oct. 13, 1977, at 3-4. It is generally agreed that solidification technology is "quite well developed", and that some of the suggested processes "have been extensively applied." Willrich & Lester, supra n.7, at 39.

^{21/} Id.; see also 1975 Hearings, supra n.7 at 19 (testimony of Baranowski); Radioactive Waste Management: Hearings Before the Subcomm. on Environment and Safety of the Joint Committee on Atomic Energy, 94th Cong., 2d Sess. 29 (1976) (hereinafter "1976 Hearings") (testimony of Dr. Roberts, ERDA).

^{22/} See R. at 615, 3901-02.

been stored safely in stainless steel bins enclosed in buried concrete vaults at the Idaho National Engineering Laboratory since 1963.^{23/} Shipment of the solidified waste would be accomplished by the use of casks similar to those presently utilized for transporting irradiated spent fuel. The transportation of irradiated spent fuel is a well-developed technology subject to strict regulation by the Commission and the Department of Transportation.^{24/}

The destination point would be a federally operated waste repository. Almost immediately after the advent of commercial nuclear power, the Atomic Energy Commission ("AEC") requested NAS-NRC in 1955 to study the feasibility of disposing of radioactive waste materials on land.^{25/} In response, the Committee on Waste Disposal was formed, and, after a few preliminary sessions at Johns Hopkins University, it sponsored a conference at Princeton University in September 1955.^{26/} The consensus reached at this

^{23/} See 1974 GAO Report, supra n.9, at 21. A thorough evaluation of alternative interim storage methods has been completed by ERDA. See R. at 3903-42.

^{24/} See R. at 4499-5011 (summary of government regulations pertaining to transportation of radioactive materials). The record also includes a thorough analysis of the available transportation alternatives (see R. at 735-43, 3944-60).

^{25/} See R. at 800, 1217, 2067; see also 1977 GAO Report, supra n.9, at 8; 1977 Hearings, supra n.5, at 5 (testimony of Dr. Hebel).

^{26/} See 1976 Hearings, supra n.21, at 146-47 (testimony of Dr. John C. Frye, former chairman, NAS-NRC Committee on Radioactive Waste Management).

conference, as supplemented by authoritative information from several other sources, was included in the Committee report published in April 1957.^{27/} That publication counseled that naturally occurring salt formations were possibly the best geologic repository for the permanent disposal of radioactive wastes.^{28/} Subsequent reviews by NAS-NRC committees have continued to endorse bedded salt formations as the most promising geologic medium for waste disposal.^{29/} Moreover, as a result of these respected endorsements, the Oak Ridge National Laboratory ("ORNL") embarked on a long and detailed series of research projects to study the feasibility of radioactive waste disposal in salt. Included in this program was a study, called Project Salt Vault, begun by ORNL in 1965 to determine the consequences of exposing bulk salt to radiation and heat.^{30/} The experiments involved storing reactor spent fuel elements in an abandoned salt mine near Lyons, Kansas. Following favorable findings, the experiment was terminated and the spent fuel was retrieved successfully.^{31/}

On the basis of the substantial quantity of information developed with respect to waste disposal in bedded-salt formations, a

^{27/} See n.15, supra.

^{28/} Id.; see also sources cited at n.25, supra.

^{29/} Such recommendations were made in 1961, 1966, and 1970. See W. Thurston, "Minutes of the Meeting December 7-8, 1961", NAS-NRC Committee on Geologic Aspects of Radioactive Waste; NAS-NRC, Report to the U. S. Atomic Energy Commission by the Committee on Geologic Aspects of Radioactive Waste Disposal (May 1966); NAS-NRC Disposal of Solid Radioactive Wastes in Bedded Salt Deposits (1970).

^{30/} See R. at 800.

^{31/} See 1977 GAO Report, supra n. 9, at 8. Additional development work at Lyons was halted because of site problems. See p. 22, infra.

model federal repository has been described;^{32/} in addition, alternative repository techniques have been evaluated.^{33/} In connection with this work, site selection criteria have been developed,^{34/} as have system qualification criteria.^{35/} Finally, the operational impacts from such a repository have been analyzed,^{36/} along with a risk assessment in the unlikely event of accident or repository failure.^{37/} A recent review of this work by an American Physical Society study group led that body to conclude that effective long-term waste isolation can in fact be achieved by geologic emplacement.^{38/}

It can confidently be stated, therefore, that, taken together, the present status of technologies with respect to waste solidification, transportation and geologic disposal are sufficient to implement a safe large-scale waste disposal program. Indeed, this conclusion has been subscribed to with increasing frequency in recent years. In May 1976, the Energy Research and Development Administration ("ERDA") issued a comprehensive five-volume report

^{32/} See R. at 668-70, 2068-72, 4129-31.

^{33/} See R. at 663-64, 2066-67, 4131-89.

^{34/} See R. at 664-66, 2066-68, 4013-25, 4238-50.

^{35/} See R. at 667-68, 4026-41.

^{36/} See R. at 670-76, 2072-82.

^{37/} See R. at 677-90, 2083-85.

^{38/} See 1977 Hearings, supra n.5, at 6 (testimony of Dr. Hebel).

entitled, Alternatives for Managing Wastes from Reactors and Post-Fission Operations in the LWR Fuel Cycle, ERDA-76-43 (R. at 3058-4511). The report described the types of radioactive wastes which are expected to be produced in the "back end" of the commercial nuclear fuel cycle, the alternative technologies that can be used to manage these wastes, and the availability of those technologies. In summarizing the status of the technology, the report concluded:

Management of radioactive wastes from all options for the back end of the LWR [Light Water Reactor] fuel cycle can be accomplished using commercialized or available technology as defined above. Technologies for managing wastes from LWR reactors are fully commercialized.^{39/}

Similarly, in May 1976, the report issued by the President's Energy Resources Council and entitled, Management of Commercial Radioactive Nuclear Wastes -- A Status Report, stated:

It is scientifically and technologically feasible to manage these radioactive wastes in a safe manner. This is based on the knowhow and technology amassed through research, development and demonstration * * *.^{40/}

^{39/}

R. at 3080. Commercialized technology was defined as that which is in routine use with radioactive materials for industry purposes at economic scale. Technology was defined as "available" if its status is such that design and construction of a full-scale commercial installation can be initiated; design verification tests might be required. Id.

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Reprinted in 1976 Hearings, supra n.21, at 9. The Energy Resources Council compiled this report in connection with a number of federal agencies, including ERDA, the Federal Energy Administration, the Environmental Protection Agency, the Council on Environmental Quality, the Department of the Interior (U. S. Geological Survey), and the Department of Commerce. Formation of the Energy Resources Council is pursuant to the ERA, § 108, 42 U.S.C. § 5818 (Supp. V 1975).

This conclusion was followed by the observation that:

The record in managing radioactive wastes over the last 30 years includes both favorable experience and instances where problems have occurred. While there have been no discernible health and safety effects on the public from these activities, the experience gained has benefited future planning, and should minimize problems when large-scale commercial operations begin.^{41/}

The same view was expressed several months later by the Electric Power Research Institute ("EPRI") in its September 1976 report entitled, Status of Commercial Nuclear High-Level Waste Disposal. EPRI there concluded:

In summary, the limiting item in implementing a reference HLW disposal process in the U.S. does not appear to be waste disposal technology per se, rather it is the requirement for policy makers to adopt one of several acceptable technologies, and to obtain public understanding and acceptance of the technology and the related waste handling and waste isolation criteria.^{42/}

And a March 1977 Ford Foundation study entitled Nuclear Power Issues and Choices also recognized that radioactive waste management technology had progressed sufficiently to alleviate the safety concerns that had been aired. The study once again confirmed that:

Disposal of waste in stable geologic formations which are isolated from appreciable contact with ground water appears to provide adequate assurance against the escape of consequential amounts of radioactivity even over long periods of time.^{43/}

^{41/}
Id. at 10.

^{42/}
G. J. Dau and R. F. Williams, Status of Commercial Nuclear High-Level Waste Disposal, USDOC PB-260-559 (1976).

^{43/}
S. M. Keeny, et al., Nuclear Power Issues and Choices 266 (1977).

All of this is not to say that a large-scale waste disposal system currently is operating in this country; that is still to come. It is, however, remiss to leap from the fact that such an operational facility has not yet been constructed to the conclusion offered by NRDC that a safe, permanent waste disposal repository may never be developed. In his testimony before the Joint Committee on Atomic Energy Elliot Richardson, former chairman of the President's Energy Resources Council, explained why the steps now being taken remove all need to engage in such fatalistic speculation. He stated:

I think it's important to distinguish here between our confident belief that there exists the means, that the technology and know-how exist to deal with the management of commercial radioactive nuclear wastes, and the need for continuation of the meticulous step-by-step program for the actual management of those wastes.

This is the step-by-step program which is summarily outlined in my testimony. It will include, of course, the very careful evaluation of the geologic characteristics of the alternative terminal storage sites. The experience to date, including the fact that some early potential alternatives were later deemed not appropriate, was [factored] into the current program. All this experience will be helpful in reaching final conclusions.

But on the face of it, it seems to me as a layman that the program planned should be capable of reaching the necessary specific answers between now and 1985.^{44/}

This view finds additional support in the ongoing regulatory programs aimed at implementing the in-place technologies.

3. Regulatory programs. While NRDC has suggested that the government has lacked incentive to develop waste disposal facilities and as a result its program has been "beset by a host of delays, missteps and changes in direction" (see Pet. Br. at

^{44/} 1976 Hearings, supra, n.21, at 27.

10), there is an impressive record which, when fairly and fully reviewed, forcefully contradicts such an assessment. We have already pointed out that the existence of large quantities of waste generated by military programs provides a continuing incentive for the federal government to develop a permanent disposal system (see pp. 9-10, supra). Whatever "delays, missteps and changes in direction" may arguably have been experienced in connection with that continuing effort, they hardly evidence government complacency. To the contrary, the fact that difficulties have been encountered which required some rethinking of, and adjustments to, the program under consideration, is, instead, reflective of the care and deliberateness that the government has exercised prior to making any final decisions in this area. Indeed, such a willingness candidly to reassess prior decisions before moving ahead is cause for considerable confidence in the decision-making process that is still underway with regard to the waste disposal issue.

One of the more disturbing features of NRDC's request for rulemaking is that it would require the government to abandon its cautious, careful and generally successful approach to this problem and effectively force the Commission to choose prematurely among the various technical options available. As a result, alternative choices that could well become available in the immediate future with new technological developments would be unnecessarily foreclosed. In this connection, the observation made by Messrs. Willrich and Lester on the costs likely to result if immediate decisions on waste management are required bears repeating:

In radioactive waste management, quality of thought is more important than timeliness in decisions, because the current costs of delay are likely to be much less than the future costs of error. This reasoning runs counter to the strong pressure which currently exists for an early "solution" to the radioactive waste problem.^{45/}

In this light, the past history of waste management programs in this country provides no basis for dissatisfaction.

The initial effort by the government to build a waste repository was the AEC's announcement in 1970 that the previously used Lyons site would be developed further with an aim towards construction of a demonstration facility.^{46/} Investigations over the next two years disclosed a possibility of water entry (and potential leakage of radionuclides) in the Lyons mine from numerous old oil and exploration holes and from salt mining operations near the site; these problems were not entirely resolved when the project was cancelled in 1972 because of adverse public and political reaction.^{47/} The difficulties experienced at Lyons should not be misunderstood, however; they went to site-specific problems and not to the concept of long-term geologic storage in bedded salt deposits.^{48/} Such a disposal technique continued to have strong backing, prompting the AEC to reorient its research and development program on geologic disposal toward construction

^{45/} Willrich & Lester, supra n.7, at 57.

^{46/} See R. at 801; 1977 GAO Report, supra n.9, at 8; AEC Press Release, Nov. 11, 1970, reprinted in 1975 Hearings, supra n.7, at 89.

^{47/} Id.

^{48/} See 1977 Hearings, supra n.5 at 72-73 (testimony of Dr. Lash).

of a pilot plant to verify the information generated by years of laboratory and field experiment work.^{49/} The AEC project was designed to permit a patient and orderly search for appropriate disposal sites in salt and other geologic formations.^{50/}

This was, however, not the only area of activity. At the time the Lyons project was cancelled, the AEC announced that it would design and build engineered surface facilities capable of storing high-level radioactive wastes for up to 100 years.^{51/} These Retrievable Surface Storage Facilities ("RSSF") were considered at the time to be necessary because of an anticipated near-term generation of wastes requiring secure storage.^{52/} Analysis of the RSSF program included notification of preparation of a draft environmental impact statement,^{53/} issuance in draft form of the statement, Management of Commercial High Level and Transuranium Contaminated Radioactive Wastes, WASH-1539 (1974),

^{49/} See AEC News Release, May 24, 1972, at p. 1.

^{50/} See id.

^{51/} See id.; 1975 Hearings, supra n.7, at 16 (testimony of Baranowski), AEC Report on Status of Nuclear Waste Disposal Research and Development, reprinted in To Establish a Department of Energy and Natural Resources, Energy Research and Development Administration, and a Nuclear Safety and Licensing Commission: Hearings on S. 2135 & S. 2744 Before a Subcomm. on Reorg., Research, and Int'l. Org. of the Senate Comm. on Government Operations, 93d Cong., 2d Sess. 338, 341 (1974).

^{52/} See id.

^{53/} 38 Fed. Reg. 29350 (Oct. 24, 1973); 39 Fed. Reg. 14747 (April 26, 1974).

and notice of public hearings to be held on the statement.^{54/}

At the close of the hearings, the record was certified to the Administrator of ERDA (which had taken over responsibility for the RSSF program), along with a report by the hearing board.^{55/}

Comments received on the draft environmental statement and during the course of the hearing indicated some concern over the narrow scope of the statement.^{56/} In response to these comments, and after conducting its own fresh review of the program, ERDA announced that it was withdrawing the draft statement, as well as its request for authorization and partial funding of the RSSF program.^{57/} A more expansive approach to the waste disposal issue was then adopted, in no small part because the generation of high-level radioactive wastes from commercial power reactors did not develop as quickly as first anticipated. Frank Baranowski, Director, Division of Nuclear Fuel Cycle and Production, ERDA, described the situation to the cognizant congressional committee, the Joint Committee on Atomic Energy, in the following terms:

[D]evelopments in the commercial fuel cycle resulted in significant delays in the production of the radioactive waste which would have been stored in the RSSF.

^{54/} 39 Fed. Reg. 32929 (Sept. 12, 1974); 39 Fed. Reg. 41292 (Nov. 26, 1974).

^{55/} 40 Fed. Reg. 17071 (April 16, 1975).

^{56/} See 1977 GAO Report, supra n.9, at 8-9.

^{57/} Letter from Robert C. Seamans, Jr. to John O. Pastore (April 9, 1975), reprinted in ERDA Authorizing Legislation Fiscal Year 1976: Hearings Before the Subcomm. on Legislation of the Joint Comm. on Atomic Energy, 94th Cong., 1st Sess., pt. 2, at 1431-33 (1975).

This delay and the progress made in the geologic disposal evaluation program have led us to conclude that with the proper assignment of priorities we can achieve demonstration of geologic storage on a schedule consistent with need.

In the meantime, the RSSF concepts are well developed and demonstrations of the sealed cask concept are continuing so that a concept of surface or near-surface storage will be available if it is later required.^{58/}

The Joint Committee responded with a report directing ERDA both to expedite and intensify its reappraisal of its waste management program. The report stated:

[T]his matter [of commercial nuclear wastes] requires both prompt and careful in-depth consideration. Therefore, ERDA is directed to expedite and intensify its present NEPA review and to prepare for submission to the Joint Committee on or before March 31, 1976, a comprehensive and detailed analysis of the options for storage or disposal of commercially generated radioactive wastes in the 1975-85, 1985-2000, and 2000 and beyond time intervals. The report shall include recommendations for research and development, and a clear indication to the committee of the appropriate areas which require emphasis if satisfactory solutions to the problems posed by the need to dispose of nuclear wastes are to be found for each of these time intervals.^{59/}

The following spring, ERDA issued its five-volume Technical Alternatives Document (R. at 3058-4511). Shortly thereafter, it gave notice that it was commencing preparation of a generic programmatic environmental impact statement concerning the management of commercially generated radioactive wastes; this statement is to replace the previously withdrawn statement (WASH-1539) prepared by the AEC,^{60/} and will now be completed by the Department of Energy ("DOE").

^{58/} 1975 Hearings, supra n.7, at 16.

^{59/} S. Rep. No. 94-104, 94th Cong., 1st Sess. 33-34 (1975).

^{60/} 41 Fed. Reg. 43446 (Oct. 1, 1976).

To implement the technologies described in the Technical Alternatives Document, ERDA announced in February 1976 a greatly increased level of effort devoted to the geologic isolation of radioactive wastes.^{61/} This increased effort, designated as the National Waste Terminal Storage ("NWTS") program, has as its goal the provision of "facilities in various deep geologic formations at multiple locations in the USA which will safely dispose of the commercial radioactive waste which must be delivered to a Federal Repository for terminal storage."^{62/} To ensure timely completion of this objective, ERDA is undertaking parallel site exploration and evaluation intended to lead to the development of six repositories.^{63/} Included within the review process will be an extensive series of meetings with appropriate federal, state and local organizations as development work progresses at each of the sites.^{64/} In a recent status report to Congress, ERDA indicated

^{61/} See C.D. Zerby and W.C. McClain, "Waste Isolation in Geologic Formations in the United States", in Proceedings of the International Symposium on the Management of Wastes from the LWR Fuel Cycle 567 (1976); 1976 Hearings, supra n.21, at 46-47; 1977 Hearings, supra n.5, at 194-95; 1977 GAO Report, supra n.9, at 9; Willrich & Lester, supra n.7, at 49; see also R. at 791.

^{62/} Zerby & McClain, supra n.61, at 567.

^{63/} See id. at 573-75; 1976 Hearings, supra n.21, at 46; 1977 GAO Report, supra n.9, at 11. Eleven major geologic formations have been identified by ERDA as appropriate for location of federal waste repositories. A detailed analysis of each of the eleven areas has been undertaken, including analysis of the site-specific geology, hydrology, and seismicity. See R. at 4251-461.

^{64/} See Zerby & McClain, supra n.61, at 571, 576-77.

that the NTWS program was on schedule, and that initial operation of the first federal repository was anticipated by 1985.^{65/} This evaluation was confirmed by the independent review of Willrich and Lester, which led them to reach the following conclusion:

ERDA's terminal storage plan involving the development of multiple sites and broad public participation in the major decisions, now appears calculated to balance technological and political factors in demonstrating that there are solutions to the long-term radioactive waste management problem.^{66/}

4. Congressional oversight. As the foregoing discussion accurately reflects, Congress has played an active role as the watchdog over the described regulatory programs, and associated technical efforts, that have been directed toward the development of a safe waste disposal system. At each step in the

^{65/}

See 1977 Hearings, supra n.5, at 194-95. NRDC states that as a result of a political setback in Michigan, ERDA "must now begin anew the search for potential salt or other geologic formations that can serve as a permanent disposal facility" (Pet. Br. at 13). In fact, because ERDA realized that political problems might arise at one or another of the sites, it has proceeded with development of other sites in parallel with the Michigan site (see n.63, supra). Thus, there is no need for ERDA "to begin anew" its NTWS program.

^{66/}

Willrich & Lester, supra n.7, at 52. In addition to the NTWS program, ERDA has a separate geological investigation program underway. This effort, entitled Waste Isolation Pilot Plant, is being conducted by Sandia Laboratories at a site near Carlsbad, New Mexico. See 1977 GAO Report, supra n.9, at 9. The original purpose of this program was to develop a repository for ERDA's transuranic contaminated wastes. The General Accounting Office has pointed out, however, that the Carlsbad facility is further along than any of the other sites, and could also be used to dispose of commercially generated wastes. See id. at 21-23. Thus, even in the unlikely event that the NTWS program should fail to meet its 1985 deadline the Carlsbad facility offers backup protection.

evolutionary process, the pertinent committees of Congress have been apprised first by the AEC, and later by ERDA and the Commission, as to the status of present efforts, the problems that remain, and the future efforts to be taken to solve those problems. As a result, confidence in the timely development of a safe method for long-term disposal of radioactive wastes is derived not only from an appreciation of the ongoing activities of the responsible federal agencies, and the extent to which they have progressed, but also from the continuing congressional review of those efforts to ensure that the ongoing programs remain properly focused and on schedule. In this latter connection, the bald assertion by NRDC that agency practice with respect to waste management has not been shown to have "time and again been brought to the attention of the Joint Committee of Congress on Atomic Energy" (Pet. Br. at 46), is simply wrong. Both the Commission's decision below (see R. at 512-17), and the various comments submitted in opposition to the NRDC rulemaking petition (see R. at 418-20, 468-76), refute any such claim. Indeed, it is difficult to postulate a matter which has been more closely monitored by the Joint Committee, or about which the Joint Committee has been kept better informed.

A quick backward glance underscores the point. When Congress first initiated consideration of civilian use of nuclear power, it was recognized by all involved that many imponderables existed in the proposed widespread use of a potentially dangerous technology. The approach suggested by the President and adopted by Congress was a "regulatory scheme which is virtually unique in the degree to which broad responsibility is reposed in

the administering agency, free of close prescription in its charter as to how it shall proceed in achieving the statutory objectives."^{67/} As an adjunct, a unique relationship between the Commission and the Congress was established through the Joint Committee on Atomic Energy.⁶⁸

Both Congress and the Joint Committee were aware from the outset that the development of commercial nuclear power inevitably results in the creation of long-lived radioactive waste material, and that final resolution of the waste disposal problem had not yet been achieved.^{69/} Even so, Congress authorized the civilian use of nuclear technology. Since that time, both the successes and the failures of the waste management

^{67/} Siegel v. AEC, 400 F.2d 778, 783 (D.C. Cir. 1968).

^{68/} This was fully recognized in Siegel, supra; see also AEA, §§ 201-07, 42 U.S.C. §§ 2251-57 (1970). While the Joint Committee on Atomic Energy has been abolished (see Pub. L. 95-110, 91 Stat. 885, to be codified at 42 U.S.C. § 2258), this recent occurrence in no way detracts from the detailed supervision exercised by that committee over the waste disposal problem between 1954 and September 20, 1977.

^{69/} During the House debate on the AEA, the question of waste disposition and the fact that there then existed no certainty with respect to a final resolution of the problem were specifically raised. 100 Cong. Rec. 14044-45 (Aug. 17, 1954) (remarks of Rep. Dingell), reprinted in 3 U. S. Atomic Energy Commission, Legislative History of the Atomic Energy Act of 1954, at 3003-04 (1955). Similarly, in connection with the hearings on the proposed AEA, one witness testified: "[W]e also have the materials found when uranium undergoes fission. These materials are strongly radioactive also and may be likened to the ashes of a conventional furnace." Hearings on S. 3323 & H.R. 8862 Before the Joint Comm. on Atomic Energy, 83d Cong., 2d Sess. 168 (1954), reprinted in 2 Legislative History, supra, at 1803. And another witness foresaw that there would come into being a supporting service industry for the "disposition of radioactive wastes." Id. at 583, reprinted in 2 Legislative History, supra, at 2221.

program have been reported to Congress. Hearings before the Joint Committee on Atomic Energy, the House and Senate Appropriations Committees, and the House Interior Committee forcefully attest to that fact.

The first full-scale presentation was made to the Joint Committee in 1959.^{70/} Those hearings took five days to complete and included over 3000 pages of testimony and exhibits on the waste disposal issue. In 1961 "preliminary results" of a field program using salt structures as a disposal medium were described; an AEC witness stated that a pilot plant to study calcination had been completed.^{71/} One year later, Chairman Seaborg described further the ongoing research on solidification before the Joint Committee.^{72/} An AEC-prepared report submitted to

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Hearings on Industrial Radioactive Waste Disposal Before the Special Subcomm. on Radiation of the Joint Comm. on Atomic Energy, 86th Cong., 1st Sess. passim (1959) (5 Vols.). On the first day of the hearings, the following exchange took place between the Subcommittee Chairman and the first witness (id. at 10):

Representative Holifield: So it would be accurate to say that the problem of permanent disposal of high-level waste has not been solved; that it is in a state of suspension; that we are holding these high-level wastes to the extent of many millions of gallons in a temporary custody type of control and that no decisions have been made as to the final disposal of the high-level wastes.

Dr. Wolman: Unless there is some disclosure this week before this committee, which would modify your statement, I would say that that is correct.

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Hearings on Development of the Atomic Energy Industry Before the Joint Comm. on Atomic Energy, 86th Cong., 1st Sess. 15-16 (1961).

72/

Hearings on AEC Authorizing Legislation Fiscal Year 1963 Before the Subcomm. on Legislation of the Joint Comm. on Atomic Energy, 87th Cong., 2d Sess. 97-98 (1962).

President Kennedy in November 1962 stated that the "problem [of developing methods for ultimate storage of high-level wastes] is technically solvable * * *" and was still in the "research stage."^{73/}

By 1965, the AEC was describing to the Joint Committee prototype demonstrations, laboratory investigations and field studies in solidification and storage technologies.^{74/} In 1967, the AEC described the need to develop and demonstrate these technologies.^{75/} The 1968 authorization hearings included a presentation on the status of solidification (in the engineering demonstration phase) and long-term geologic storage (in the field testing stage).^{76/} At the 1970 authorization hearings, the AEC discussed "three candidate means for solidifying wastes from reprocessing plants" and the continuing need to design a geologic repository.^{77/}

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Atomic Energy Commission, Civilian Nuclear Power -- A Report to the President 54-55 (1962), reprinted in Joint Comm. on Atomic Energy, 92d Cong., 1st Sess., Report on Nuclear Power and Related Energy Programs - 1968 through 1970, Appendix 1, at 229 (1971).

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Hearings on AEC Authorizing Legislation Fiscal Year 1966 Before the Joint Comm. on Atomic Energy, 89th Cong., 1st Sess. 875-76, 1217-18 (1965).

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Atomic Energy Commission, Civilian Nuclear Power -- 1967 Supplement to the 1962 Report to the President (1967), reprinted in Joint Comm. on Atomic Energy, supra n.73, at 439.

^{76/}

Hearings on AEC Authorizing Legislation Fiscal Year 1969 Before the Joint Comm. on Atomic Energy, 90th Cong., 2d Sess., pt. 1, at 704 (1968).

^{77/}

Hearings on AEC Authorizing Legislation Fiscal Year 1970 Before the Joint Comm. on Atomic Energy, 91st Cong., 2d Sess. 1424 (1970).

In 1971, AEC Commissioner Johnson summarized his testimony by stating:

[T]here is no real question in anybody's mind about the waste being handled safely. The problem is that there are various ways that it can be handled, and they all cost different amounts of money. The problem is to find out how to get an economic as well as reliable method of disposal. The salt mine looks to be one of the most favored methods of disposal.^{78/}

Similar language was used by Frank Baranowski, ERDA, to describe the status of efforts in 1975. He testified:

[E]ffective management of nuclear wastes in a manner which effectively protects man and his environment still has major unsolved problems. The ERDA program has progressed to the point where solutions to each of these problems can be anticipated with confidence. Realization of these solutions will require considerable applications-type R. & D. over the next few years.^{79/}

And in 1976, Elliot Richardson, as Chairman of the Energy Resources Council, presented a new timetable for the management of radioactive waste. This schedule called for Commission waste form and packaging regulations in 1978, ERDA site selection for underground excavation in 1979, and beginning of disposal facility operations in 1985.^{80/} This program, with additional emphasis on the geologic disposal of spent fuel elements, was again presented to Congress in 1977.^{81/}

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Hearings on Public Works for Water and Power Development and Atomic Energy Commission Appropriation Bill, 1972, Before a Subcomm. of the House Comm. on Appropriations, 92d Cong., 1st Sess., pt. 4, at 151-57 (1971).

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1975 Hearings, supra n.7, at 18.

^{80/}

1976 Hearings, supra n.21, at 20-21.

^{81/}

1977 Hearings, supra n.5, at 193-97.

Throughout this entire period, Congress has never once made the suggestion that nuclear power plant licensing should be suspended or terminated.^{82/} NRDC's explanation for this legislative response is that no one ever directly brought to Congress' attention the fact that the Commission had never made an express safety finding concerning disposal of radioactive wastes in reactor licensing proceedings (Pet. Br. at 46). NRDC is incorrect. During hearings held in connection with the Energy Reorganization Act of 1974, Congress was told in precise terms that "[m]any people have come to believe that present nuclear power plant construction plans, which imply accumulation of more radioactive wastes, should be halted until a proven method of safely storing radioactive wastes is available."^{83/} Yet, the end-result of these hearings was not a halt to power reactor licensing; rather, the congressional decision was to require the Commission to license federal facilities for the disposal of commercially

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During this period several amendments to the licensing provisions of the AEA were adopted without any indication from Congress of dissatisfaction with the ongoing regulatory waste disposal program, or even a passing suggestion that the matters under study in that area require any sort of curb on the Commission's separate licensing responsibility. See, e.g., Pub. Law 87-206 (75 Stat. 475) (1961), adding § 190, 42 U.S.C. § 2240; Pub. Law 87-615 (76 Stat. 409) (1962), adding § 191, 42 U.S.C. §§ 2241, amending § 189, 42 U.S.C. § 2239; Pub. Law 88-489 (78 Stat. 602) (1964), amending § 184, 42 U.S.C. § 2234; Pub. Law 91-560 (84 Stat. 1472) (1970), amending §§ 102-105, 42 U.S.C. §§ 2132-2135; Pub. Law 92-807 (86 Stat. 191) (1972), adding § 192, 42 U.S.C. § 2242.

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To Establish an Energy Research and Development Administration and a Nuclear Energy Commission: Hearings on S. 2744 Before the Subcomm. on Reorg., Research and Int'l. Org. of the Senate Comm. on Government Operations, 93d Cong., 1st Sess. 213 (1973) (testimony of Daniel Ford, Union of Concerned Scientists).

generated high-level radioactive wastes -- facilities which Congress recognized were not then in existence and probably would not be until some future time, "probably in the 1980's."^{84/}

This was not viewed as the end of the matter, however. In 1975, continuing congressional awareness of the need to harmonize the Commission's licensing responsibilities with the ongoing regulatory waste disposal programs prompted the Joint Committee to address the following supplemental question to ERDA, the Commission, and the Environmental Protection Agency:

Are there any basic technical problems standing in the way of demonstrating an acceptable program for the disposal of radioactive wastes? Are these or any related problems of such importance or difficulty of solution as to suggest that we should not permit the production of radioactive wastes?^{85/}

In each instance, the responding federal agency concluded that a halt to further nuclear licensing was unwarranted.^{86/} Congress has not found reason to disagree.^{87/}

Nor should such a conclusion come as a surprise. Given the technical and regulatory programs previously described, and the

^{84/} S. Rep. No. 93-980, 93d Cong., 2d Sess. 60 (1974).

^{85/} 1975 Hearings, supra n.7, at 130, 141, 146.

^{86/} Id. at 136, 146, 164.

^{87/} In fact, when the Joint Committee was recently confronted once again with the very consideration which NRDC claims has never been forcefully presented to it, the response given in its 1976 report on this country's breeder reactor program was as follows:

[O]n the whole, the potential difficulties which may be encountered in the radioactive waste management program do not pose risks to the public of such magnitude that this Nation should forego its nuclear energy program . . .

Ad Hoc Subcomm. to Review the Liquid Metal Fast Breeder Reactor Program, 94th Cong., 2d Sess., 1 Review of National Breeder Reactor Program 12, 79 (Joint Comm. Print 1976).

testimony presented to Congress on the recent status of those efforts, there has been more than sufficient support for Congress' view that the waste disposal problem is indeed soluble.^{88/} In just the same manner that Congress has been able to satisfy itself as to the ultimate success of the waste disposal problem, so too was the Commission below able to express reasonable confidence that permanent disposal of radioactive wastes can be accomplished by the time such disposal becomes necessary. It, therefore, correctly dismissed as improvident the rulemaking petition of NRDC with its suggestion of a moratorium on further licensing activities.

IV. Summary of Argument

Intervenors are in disagreement with the position taken by NRDC and the California Energy Commission both as to the tone and the substance of the arguments advanced. We fully recognize that the safe disposal of high-level radioactive wastes is a central element of the Commission's regulatory responsibility.^{89/} We

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See, e.g., 1975 Hearings, supra n.7, at 1 ("In requesting this report [on storage and disposal options from ERDA], and indeed in its role of monitoring the development of the Nation's nuclear power program, the [Joint] Committee has assumed that the problem of safe, secure and effective disposal of radioactive waste can, in fact, be solved") (statement of Rep. Young). See also 1976 Hearings, supra, n.21, at 2 ("[I]ndividuals who have worked in this field know that the technological base already exists for handling of [radioactive] wastes and that a successful waste program requires only good engineering and good management to insure its development in an orderly and timely manner") (statement of Rep. McCormick).

^{89/}

See Energy Reorganization Act of 1974, § 202(3) & (4), 42 U.S.C. § 5842(3) & (4) (Supp. V 1975).

further appreciate the need to have assurances that such waste disposal can be accomplished in a manner that will both "protect the health and safety of the public" and "promote the common defense and security".^{90/} Where we part company with the Petitioner and the Amicus is in their self-serving doomsday prophecies which stand as the essential underpinning for their similar Appeal Briefs.^{91/} Such sophistry seeks to substitute for rational debate on the technical issues a public relations position which perhaps has some superficial, visceral appeal, but is in reality divorced from the scientific developments that have occurred with regard to the matter in question in recent years.^{92/}

Thus, NRDC and the California Energy Commission have seen fit to ignore totally the significant technological successes that have been achieved over the past thirty years by the federal government in developing a safe waste disposal system, notwithstanding that this knowledge was at the core of the Commission's decision that is now under attack. In point of fact, there presently exists an extensive inventory of basic processes and engineering technologies on which to draw in formulating techniques to ensure the prudent management of radioactive waste

^{90/} See Atomic Energy Act of 1954, § 103(b), 42 U.S.C. § 2133(b) (1970).

^{91/} In view of the fact that the Amicus Brief filed by the California Energy Commission sets forth essentially the same arguments made by NRDC in its Appeal Brief, our focus herein will be on the latter, except to the limited extent that special mention of an argument made by the California Energy Commission is deemed warranted.

^{92/} The success of the NRDC approach is evidenced by the increasingly popular view that waste disposal is now a political and public relations problem rather than an engineering issue. See, e.g., 1977 GAO Report, supra n.9, at xii-xiii, 13-15; see also p. 27 & n.65, supra.

materials on a large-scale basis. Pursuant to legislative direction, ERDA has prepared and submitted to Congress a comprehensive and detailed analysis of the storage and disposal options that are now available. In connection with that effort, ERDA also has begun preparation of a generic environmental impact statement, which is being continued by DOE. Concurrently, the Commission is developing design criteria applicable for the licensing of the federal waste repository. It is anticipated that DOE will start receiving solidified radioactive wastes at its pilot plant terminal storage facility by the year 1985.

The practical effect of the NRDC rulemaking petition, if granted, would be to force a premature selection and evaluation of waste disposal technologies. It was in no small part in recognition of the disruptive effect that this requested course would have on current efforts to find the optimum solution to the long-term disposal problem that the Commission correctly ruled it was not required at this time to make the definitive safety finding requested by NRDC. The decision plainly did not "exempt" or "carve out" waste disposal technologies from the Commission's required safety findings; rather, the Commission held only that now was not the appropriate time for such a safety finding, which was neither compelled by policy consideration, scientific reality, the Commission's own regulations, nor the statutory directives under which those regulations are promulgated.

In response, NRDC raises what are essentially two arguments. First, it asserts that the AEA requires the Commission to make the requested definitive safety finding at this time and prior to the further licensing of nuclear power reactors (see Pet. Br. at

33-39), contending that, if such is not the Commission's mandate, the AEA and its underlying regulations are wholly inadequate to protect the public and should not control the disposition of the rulemaking petition (see Pet. Br. at 20-25). This thesis is faulty in both of its premises. An analysis of the relevant statutory framework, including both the AEA and the ERA, demonstrates that Congress has not required the Commission to pass on the safety of facilities which have not yet been designed. Rather, Congress has directed the Commission to evaluate the safety of each facility when a construction permit or operating license application for that facility is filed with the Commission. Such a practice has been Commission policy since the inception of the commercial reactor program. Moreover, in view of the Commission's reasonable confidence that waste disposal facilities will be available when needed, it cannot be maintained that such a regulatory framework is insufficient to protect the public safety. To the extent that the NRDC remains unsatisfied, its forum for complaint is not the Commission nor this Court, but instead Congress, which has thus far retained primary oversight responsibility for devising and implementing an ongoing program designed to accomplish the best and safest means of disposing of radioactive waste materials permanently. Indeed, Congress has itself signalled on more than one occasion that it does not deem it appropriate to halt nuclear licensing prior to making a definitive safety finding on waste disposal (see pp. 33-35, supra).

NRDC's second line of attack -- that the Commission has attempted impermissibly to insulate its analysis of the waste disposal issue from judicial review (see Pet. Br. at 25-33), and has

violated accepted principles of agency rulemaking, including the principles of the National Environmental Policy Act ("NEPA") (see Pet. Br. at 39-43) -- is no better grounded. Far from being concealed from the "scrutiny of the scientific community and the public" (Pet. Br. at 30), the technical analysis underlying the Commission's decision is explicitly referenced in the order denying the NRDC rulemaking petition, which, we note, was sufficiently exposed to warrant special attention by NRDC in its Appeal Brief (see Pet. Br. at 32-33).

Thus, there is no cause to fault the Commission's present decision as somehow being obscure or inarticulate in its reasoning or conclusions. Nor can NRDC legitimately complain of being denied an adequate chance to make its position known. As its own attachments to the rulemaking petition attest, NRDC has been offered and has taken advantage of numerous opportunities to participate before the Commission and before ERDA in the formulation of waste disposal policy.^{93/} Accordingly, if NRDC has any cause for dissatisfaction (albeit of unsound origin), it is with the result reached and not the procedures employed.

NRDC's further argument that the Commission's decision is inconsistent with NEPA decision-making principles rests on a fundamental misunderstanding as to the relationship between the

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See R. at 20-83 (NRDC comments on draft environmental impact statement: Management of Commercial High-Level and Transuranium-Contaminated Radioactive Waste (WASH-1539)); 84-110 (Memorandum on NRDC rulemaking petition relating to NRC licensing of disposal of low-level radioactive wastes (Docket No. PRM-20-7)); 111-44 (NRDC comments on NRC's General Statement of Policy relating to the environmental effects of the nuclear fuel cycle (Docket No. PRM-51-3)); 323-65 (Memorandum in support of NRC licensing of ERDA high-level waste storage facilities).

Commission's health and safety obligations under the AEA and its environmental obligations under NEPA. Pursuant to the District of Columbia Circuit Court opinion in NRDC v. NRC (Uranium Fuel Cycle), 547 F.2d 633 (D.C. Cir. 1976), cert. granted sub nom. Vermont Yankee Nuclear Power Co. v. NRDC, 429 U.S. 1090 (1977), the Commission presently is conducting additional hearings aimed at adopting a final rule covering the environmental impacts from spent fuel reprocessing and radioactive waste management.^{94/}

What NRDC is now seeking is a parallel proceeding, with the same broad scope as the ongoing NEPA hearing, but aimed at reaching a final, definitive safety finding. NEPA does not require such a proceeding, and NRDC does not even attempt to argue on the basis of cases construing the AEA (compare Pet. Br. at 40-43) that such a hearing must be held. The inconsistency to which NRDC refers thus does not have its derivations in NEPA, nor have we been advised where else to look to find support for this proposition.

In the final analysis, what NRDC is seeking to accomplish indirectly here is what it and others have properly been denied in their direct challenges to the issuance of nuclear construction permits and operating licenses; that is, a total moratorium on nuclear plant licensing. Thus, while carefully stating that the

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That proceeding will encompass the full gamut of NEPA-related issues necessary to complete the final reprocessing and waste disposal portions of the generic treatment of fuel cycle issues in power reactor licensing proceedings. See 41 Fed. Reg. 34707 (Aug. 16, 1976); 41 Fed. Reg. 45849 (Oct. 18, 1976); 41 Fed. Reg. 49898 (Nov. 11, 1976); 42 Fed. Reg. 13803 (March 14, 1977); 42 Fed. Reg. 26987 (May 26, 1977); 42 Fed. Reg. 37375 (July 21, 1977).

"NRC's acceptance of responsibility to make [the requested] definitive safety finding would not in itself entail a moratorium on power plant licensing" (Pet. Br. at 20; emphasis in original), the relief sought below and in this Court is that further licensing be halted until the requested finding is made. Obviously, the inability of NRDC to demonstrate error in the Commission decision is conclusive as to its request for a moratorium. But even apart from the frailty of the opposing legal arguments, it is important to recognize that neither NRDC nor the California Energy Commission has offered anything that even remotely suggests the need for a licensing moratorium. In comparison with the wastes generated by the existing military programs,^{95/} only a very small fraction of this country's potential radioactive waste inventory can arguably be attributable to the continued licensing of nuclear reactors during the pendency of a waste disposal rule-making proceeding,^{96/} even if such a proceeding should eventually be deemed appropriate. Thus, realistically there is no safety issue requiring a halt in licensing on the terms requested by NRDC. Indeed, compared to the enormous cost of delay that would result, and the adverse impact on this country's ability to meet its electricity needs, public interest concerns weigh heavily against a licensing moratorium.

^{95/} See 1977 GAO Report, supra, n.9, at 4.

^{96/} See id. at 5.

V. Argument

- A. THE SUCCESSFUL, ONGOING FEDERAL PROGRAM TO DISPOSE SAFELY OF COMMERCIALY GENERATED, HIGH-LEVEL RADIO-ACTIVE WASTES FULLY COMPLIES BOTH WITH THE STATUTORY DIRECTIVES OF THE ATOMIC ENERGY ACT AND THE ENERGY REORGANIZATION ACT AND WITH THE REGULATORY REQUIREMENTS OF THE COMMISSION.

The Commission's decision under review concluded that the requested definitive safety finding need not be made now, but most appropriately should be made during the licensing of a specific waste disposal facility (R. at 508-09). The Commission also concluded that there was neither a statutory (R. at 509-11) nor a regulatory (R. at 511-12) requirement that such a finding be made prior to further licensing of nuclear power reactors. These conclusions are firmly grounded and should be affirmed on this appeal.

The contrary argument made by NRDC starts boldly enough with the assertion that "the AEA requires that the NRC make a positive, definitive finding that radioactive wastes can be safely disposed of prior to the licensing of power reactors" (Pet Br. at 33). However, we need not read far to find that the crux of Petitioner's position cannot in fact be found in the clear language of any statutory provision, but, rather lies hidden somewhere between the lines, ostensibly "interwoven throughout the fabric of the AEA" (Pet. Br. at 34), or obscured within provisions of the ERA in such a manner as to be "suggestive of a congressional intent that safety of waste disposal be addressed at the reactor licensing stage" (*id.* at 36). Thus, NRDC's statutory argument is really that the AEA evidences a broad congressional concern for the protection of public health and safety (see Pet. Br. at 33-36), that such legislation is to be construed as broadly as possible to achieve its ends (see Pet.

Br. at 36-37, 44), and that, by according the statute such expansive treatment, this Court can read the AEA as compelling the Commission to make a definitive safety finding about waste disposal prior to reactor licensing (see Pet. Br. at 38-39). Understandably, no Commission regulation has been cited by NRDC in support of this thesis, as none exists.

NRDC's argument is irreconcilable with three fundamental underpinnings on which nuclear regulation has been premised in this country. First, while Congress has always been concerned about the safety of the civilian nuclear program (see pp. 27-32, supra), it elected in the AEA to delegate broad regulatory authority to the Commission in this area, and to entrust to the informed expertise of that agency the task of defining the scope and nature of the health and safety issues to be considered and resolved in a reactor licensing proceeding. Accordingly, the Commission's considered decision on such matters is not to be regarded lightly. Second, the individualized licensing scheme of the AEA, as interpreted by the Commission in its regulations and as consistently applied by the Commission in its reactor licensing proceedings, does not require that definitive waste disposal findings be made prior to reactor licensing. And, precisely because this particular aspect of the Commission's regulatory practice has been accepted by Congress after intensive review, it is entitled to particular judicial respect. Third, the division of responsibilities between ERDA (now DOE) and the Commission mandated by the ERA, as well as the legislative history of that Act, lends strong support to the Commission's decision in this proceeding. These factors are examined in more detail immediately below.

1. The decision below is in accord with the broad grant of regulatory authority delegated by Congress to the Commission.

When President Eisenhower suggested to Congress that the civilian development of nuclear power was an attainable goal, and therefore proposed legislation which would encourage such action, the unique regulatory function to be served by the Commission was openly acknowledged. In very precise terms, the President told Congress:

In order to encourage the greatest possible progress in domestic application of atomic energy, flexibility is necessary in licensing and regulatory provisions of the legislation. Until further experience with this new industry has been gained, it would be unwise to try to anticipate by law all of the many problems that are certain to arise.^{97/}

Congress responded with legislation which delegates to the Commission a large measure of responsibility to define the health and safety prerequisites of reactor licensing. This broad delegation is evidenced by licensing authority relatively unfettered by statutory criteria^{98/} and by almost unlimited rulemaking authority.^{99/} At an early point in the Commission's licensing

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Message from the President, H.R. Doc. No. 328, 83d Cong., 2d Sess. 7 (1954), reprinted in 1 Legislative History, supra n.69, at 51.

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The general authority of the Commission to license nuclear power reactors is contained in § 103, 42 U.S.C. § 2133. Separate subsections of that provision specify: (a) the procedures to be followed (§ 103(a), 42 U.S.C. § 2133(a)); (b) the information to be supplied to the Commission by applicants (§ 103(b)(3), 42 U.S.C. § 2133(b)(3)); (c) the term of any license issued (§ 103(c), 42 U.S.C. § 2133(c)); and (d) the criteria to be employed by the Commission in issuing licenses (§ 103(d), 42 U.S.C. § 2133(d)).

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The general rulemaking authority of the Commission is described in § 161, 42 U.S.C. § 2201; particularly relevant here are §§ 161(b), (i)(3) and (p), 42 U.S.C. §§ 2201(b), (i)(3) & (p).

program, the Supreme Court of the United States ruled that these two factors taken together "clearly contemplat[e] that the Commission shall by regulation set forth what the public safety requires as a prerequisite to the issuance of any license or permit under the Act." Power Reactor Development Co. v. International Union, 367 U.S. 396, 404 (1961). The present appeal would, if successful, effectively stand this conclusion on its head, and could require this Court, on the basis of an overly expansive construction of the statutory language, to enter far into the agency's expert domain and determine for itself what is necessary to protect the public health and safety.

An argument similar to NRDC's was advanced before, and rejected by, the United States Court of Appeals for the District of Columbia in Siegel v. AEC, 400 F.2d 778 (D.C. Cir. 1968). There, the claim was that the Commission had impermissibly excluded from its health and safety findings the possibility of attack or sabotage by foreign enemies. After recounting the licensing flexibility intended by Congress through its broad delegation of authority to the Commission (see id. at 783), the court held (id. at 784):

What the Commission has essentially decided is that to impose such a burden [i.e., showing that a reactor is adequately protected against foreign attack] would be to stifle utterly the peaceful utilization of atomic energy in the United States. Such a decision hardly seems to us to conflict with the Congressional purposes underlying the Act, nor to exceed the scope of the authority given the Commission by Congress to realize those purposes.

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We hold that the Commission was well within the limits of the powers delegated to it by Congress when it decided * * * to embody the policy of limitation in its regulations.

See also Union of Concerned Scientists v. AEC, 499 F.2d 1069, 1076-77, 1079 (D.C. Cir. 1974); BPI v. AEC, 502 F.2d 424, 428 n.3 (D.C. Cir. 1974); North Anna Environmental Coalition v. NRC, 533 F.2d 655, 658-59 (D.C. Cir. 1976).

In a similar manner here, the Commission properly concluded that, in exercising its licensing discretion, there was no need to make a definitive safety finding on waste disposal prior to reactor licensing. Such a judgment is entitled to judicial respect. Compare Power Reactor Development Co., supra, 367 U.S. at 408. It is buttressed not only by the Commission's independent assessment of this country's waste disposal program (compare R. at 518-22 and pp. 12-27, supra), but also by the Commission's interpretation of its organic statute and the regulations promulgated thereunder (see R. at 509-17).

2. The decision below is in accord with the Commission's long-standing interpretation of the applicable statute and regulations, as reflected in consistent, prior agency action well known to Congress. Pursuant to the AEA, the Commission has authority to license a broad range of nuclear-related activities. The licensing of nuclear power reactors, or, using the terminology of the AEA, "utilization facilities",^{100/} is only one facet of this licensing responsibility. Separate chapters of the AEA describe the Commission's authority to issue other types of licenses, depending on whether the applicant for a license seeks to possess

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The term utilization facility is defined in § 11(cc), 42 U.S.C. § 2014(cc) (1970). Utilization facilities are regulated pursuant to chapters 10 (§§ 101-10, 42 U.S.C. §§ 2131-40 (1970)) and 16 (§§ 181-92, 42 U.S.C. §§ 2231-42 (1970)) of the AEA. See also 10 C.F.R. Part 50 (1977).

and use "special nuclear material", ^{101/} "source material", ^{102/} byproduct material", ^{103/} a "production facility", ^{104/} or a utilization facility. Quite naturally, the Commission has from the outset of the civilian nuclear program implemented this statutory framework by licensing each facility separately, with due regard for the safety considerations relevant to that particular facility, but without overreaching to make safety findings that can be considered more appropriately in connection with other types of license applications. Accordingly, regulatory scrutiny has been individualized to the unique impacts presented by the specific application that has been tendered. In practice this has meant that in licensing proceedings the Commission has never made safety findings which extended beyond the scope of the license

101/

The term special nuclear material, generally meaning enriched uranium and plutonium, is defined in § 11(aa), 42 U.S.C. § 2014(aa) (1970). Possession and use of special nuclear material is regulated pursuant to chapter 6 (§§ 51-58, 42 U.S.C. §§ 2071-78 (1970)) of the AEA. See also 10 C.F.R. Part 70 (1977).

102/

The term source material, generally meaning material containing fissionable elements but not including special nuclear material, is defined in § 11(z), 42 U.S.C. § 2014(z) (1970). Possession and use of source material is regulated pursuant to chapter 7 (§§ 61-69, 42 U.S.C. §§ 2091-99 (1970)) of the AEA. See also 10 C.F.R. Part 40 (1977).

103/

The term byproduct material, generally meaning any radioactive material produced by exposure to radiation, is defined in § 11(e), 42 U.S.C. § 2014(e) (1970). Possession and use of byproduct material is regulated pursuant to chapter 8 (§§ 81-82, 42 U.S.C. §§ 2111-12 (1970)) of the AEA. See also 10 C.F.R. Parts 30-36 (1977).

104/

The term production facility, generally meaning a facility capable of producing significant quantities of special nuclear material, is defined in § 11(v), 42 U.S.C. § 2014(v) (1970). Production facilities are regulated pursuant to chapter 5 (§§ 41-44, 42 U.S.C. §§ 2061-64 (1970)), and, like utilization facilities, chapters 10 and 16 of the AEA. See n.100, supra.

applied for, or reached activities which would be covered by other licensing actions (such as reprocessing or waste disposal).^{105/}

And, such an approach comports with both the language of the AEA and the regulations promulgated thereunder.

Thus, Section 182(a), 42 U.S.C. § 2232(a), requires each applicant for a license to provide to the Commission "such information as the Commission, by rule or regulation, may determine to be necessary to decide such of the technical and financial qualifications of the applicant * * * as the Commission may deem appropriate for the license." That provision then specifies the particular types of information that must be included in an application for a nuclear power reactor. It states (id.):

[T]he applicant shall state such technical specifications, including information on the amount, kind, and source of special nuclear material required, the place of use, the specific characteristics of the facility, and such information as the Commission may by rule or regulation, deem necessary in order to enable it to find that the utilization or production of special nuclear material will be in accord with the common defense and security and will provide adequate protection to the health and safety of the public.

As the Commission pointed out below (see R. at 510-11), in each instance the information to be provided pertains solely to the facility and applicant to be licensed. In no case does the AEA direct an applicant for a license seeking to construct or operate a nuclear power plant to provide information regarding high-level waste disposal facilities.

^{105/}

However, it is important to note that in every case the Commission makes environmental findings on all elements of the nuclear fuel cycle, including an assessment of the environmental impacts associated with disposal of high-level radioactive wastes. See p. 64, infra.

Examination of the regulations implementing the statute crystallizes even further the individualized licensing scheme administered by the Commission. The technical information to be provided by an applicant, whether it be in the Preliminary Safety Analysis Report ("PSAR")^{106/} or the Final Safety Analysis Report ("FSAR"),^{107/} relates solely to the particular site to be utilized, the facility to be constructed and operated on that site, and the applicant who will construct and operate the reactor. The design criteria which the proposed reactor is to satisfy are addressed to the structures, systems and components of that reactor,^{108/} and not, for example, those of facilities

106/

Each application for a construction permit is to include a PSAR. 10 C.F.R. § 50.34(a) (1977). Among the information specified by the regulation to be contained therein is the following (10 C.F.R. § 50.34(a)(4) (1977) (emphasis added)):

A preliminary analysis and evaluation of the design and performance of structures, systems and components of the facility with the objective of assessing the risk to public health and safety resulting from operation of the facility * * *.

107/

Each application for a license to operate a nuclear reactor is to include an FSAR. 10 C.F.R. § 50.34(b) (1977). Like the PSAR, the information to be contained in the FSAR is directed to the facility to be licensed. In relevant part the regulation specifies the following (id.; emphasis added):

information that describes the facility, presents the design bases and the limits on its operation, and presents a safety analysis of the structures, systems, and components and of the facility as a whole * * *.

108/

See General Design Criteria for Nuclear Power Plants, 10 C.F.R. Part 50, App. A (1977). The Introduction to the Design Criteria clearly specifies the purposes to be served; it is therein stated:

The principal design criteria establish the necessary design, fabrication, construction, testing and performance requirements for structures, systems and
(Continued next page)

for reprocessing of fuel^{109/} or ultimate disposal of high-level radioactive waste. At the only point of tangency between reactor operation and waste disposal, i.e., on-site spent fuel storage, the safety and adequacy of an applicant's plans are thoroughly reviewed by the Commission.^{110/}

In short, the Commission by regulation and practice has dealt separately with the health and safety aspects of each phase of the nuclear fuel cycle. The safety aspects of power reactors are considered when the Commission is called upon to license power reactors. The safety aspects of reprocessing facilities are considered when the Commission is called upon to license reprocessing facilities. And, in like manner, the safety aspects of high-level radio-

108/ (Continued)

components important to safety; that is structures, systems and components that provide reasonable assurance that the facility can be operated without undue risk to the health and safety of the public.

Two of the enumerated 64 criteria deal with the handling and temporary storage of spent fuel (see Criteria 61 and 62). The presence of those criteria, and the absence of any criteria on disposal of high-level radioactive waste, serve further to confirm the conclusion set forth above in the text.

109/

The Commission has begun a rulemaking proceeding to establish General Design Criteria similar in form to those for nuclear power plants but for use in licensing fuel reprocessing plants. See proposed App. P, 10 C.F.R. Part 50, 39 Fed. Reg. 26293 (July 18, 1974).

110/

Detailed guidance on the contents of the PSAR and FSAR are provided in Nuclear Regulatory Commission, Regulatory Guide 1.70: Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants LWR Edition, NUREG-75/094 (rev. 2, 1975). Section 9.1 of this Guide specifies the information that must be provided with respect to fuel storage and handling activities at the power plant site. In addition, further detail on the spent fuel storage facility design basis is contained in Nuclear Regulatory Commission, Regulatory Guide 1.13 (rev. 1, 1975).

active waste disposal facilities will be considered by the Commission when it receives a DOE application for a federal repository.^{111/}

As a practical, as well as a legal, matter, this approach is well founded. The safety analysis reports that are generally required in connection with the application for a power reactor license are lengthy and detailed.^{112/} Information similar to that set forth in the PSAR and FSAR would necessarily have to be compiled for Commission review before the sort of definitive safety finding urged by NRDC could be made with regard to the long-term waste disposal issue. To bundle all of these complex considerations into a single hearing would not only unnecessarily protract and complicate an already prolonged and complex administrative review process, but it would do so without any real likelihood of achieving the desired result.

This is due in no small part to the obvious fact that the applicant for a power reactor license is not the party best suited to provide the Commission with the sort of comprehensive safety evaluation needed to assess fully the issuance of a license for a high-level waste repository. That assignment is most appropri-

^{111/}

See EPA, § 202(3) & (4), 42 U.S.C. § 5842(3) & (4) (Supp. V 1975).

^{112/}

A recent PSAR, filed by the Ohio Edison Company in connection with its application to construct and operate the Erie Nuclear Plant, Units 1 and 2 (Docket Nos. STN-50-580 & -581), is composed of 17 thick, expandable notebook binders, taking almost 5 feet of shelf space. Included within the thousands of pages submitted to the Commission are detailed engineering drawings, sophisticated component simulations based on complex computer codes, and detailed assessments of projected facility operation. See generally Union of Concerned Scientists v. AEC, supra, 499 F.2d at 1072-73 (description of FSAR).

ately performed by one who has carefully planned such an undertaking and is seeking the Commission's authorization to build the facility; significantly, such an applicant cannot by law be a reactor licensee, but instead must be the federal government (see p. 55 & n.117, infra). To require the Commission to move forward precipitously on an application for a reactor permit and make the definitive safety finding on radioactive waste disposal without the benefit of a detailed safety evaluation would border on the irresponsible.

Similarly lacking in responsibility is the suggestion by NRDC to declare a moratorium on power reactor licenses until the definitive safety finding has been made. The Commission's solution, to move ahead on both fronts simultaneously so long as it has reasonable confidence that the long-term waste disposal problems are capable of resolution and that a safe repository will be available when needed, is the proper harmonization of the two extremes. It has not only the force of considered Commission action on the basis of a careful interpretation of its own regulations and the guiding statute from which its regulatory authority is derived,^{113/} but also the benefit of repeated

^{113/}

In Power Reactor Development Co., supra, the Supreme Court reached the following conclusion as to the deference to be paid to Commission practice (367 U.S. at 408):

We see no reason why we should not accord to the Commission's interpretation of its own regulation and governing statute that respect which is customarily given to a practical administrative construction of a disputed provision. Particularly is this respect due when the administrative practice at stake "involves a contemporaneous construction of a statute by the men charged with the responsibility of setting its machinery in motion; of making the parts work ef-

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congressional review and approval. Plainly, where the Commission's regulatory scheme "has time and again been brought to the attention of the Joint Committee", as it has in this instance (see pp. 27-35, supra), "it is fair to read this history as a de facto acquiescence in and ratification of the Commission's licensing procedure by Congress." Power Reactor Development Co., supra, 367 U.S. at 408-09. Indeed, it is hard to imagine any other reading in light of Congress' active approval of the Commission's position on waste management in connection with enactment of the ERA.

3. The decision below is in accord with the Energy Reorganization Act. In section 307(c)(5) of the ERA, 42 U.S.C. § 5877(c)(5), Congress required the Commission to report upon its

113/(Continued)

ficiently and smoothly while they are yet untried and new." [Citation omitted.]

More recently, in Northern Indiana Public Service Co. v. Porter County Chapter of the Izaak Walton League of America, Inc., 423 U.S. 12 (1975), the Court had occasion to reiterate its position. It stated therein (423 U.S. at 14-15):

The Court of Appeals erred in rejecting the [NRC's] interpretation of its own regulations. That interpretation is supported by the wording of the regulations and is consistent with prior agency decisions. * * * But even if the meaning is not free from doubt, the agency's * * * interpretation sensibly conforms to the purpose and wording of the regulations. In that circumstance, the Court of Appeals was "obligated to regard as controlling (such) a reasonable, consistently applied administrative interpretation" [Citations omitted.]

In response, NRDC apparently argues that what is involved in this case is a "pure question of law" and that in such circumstances the agency's interpretation is less compelling (see Pet. Br. at 44-45). The point is not well taken. As the Commission decision itself indicates, the agency was able to defer making the requested definitive safety finding because, after drawing upon the agency's particular expertise, the Commission found reasonable confidence that a waste disposal system would be available when needed. This is exactly the situation where deference to the agency's interpretation is, as the Supreme Court noted, obligatory.

activities and findings in various areas, including efforts towards ensuring the safe, permanent disposal of high-level radioactive wastes. NRDC misinterprets this statutory provision as being "suggestive of a congressional intent that the safety of waste disposal be addressed at the reactor licensing stage" (Pet. Br. at 36). A far more accurate view of the reporting requirement is that Congress, obviously aware of the current practice of the Commission, wished to mandate that the practice continue to ensure adequate congressional review of efforts made to implement the waste disposal system. Surely, if the desire of Congress had been to effect the sort of drastic change in Commission licensing procedures that NRDC intimates, it would have accomplished its purpose far more directly.^{114/}

We need not rely on conjecture to divine what Congress had in mind, however. For, at the same time that it first established a specific requirement for the licensing of federal, high-level waste repositories,^{115/} Congress made special note of the

^{114/}See, e.g., Toilet Goods Association v. Finch, 419 F.2d 21, 27 (2d Cir. 1969) ("before a court will hold Congress to have made a basic change in regulatory procedures, legislators must either use plain language or give other clear manifestation of intent"); Ruth v. Eagle-Picher Co., 225 F.2d 572, 575 (10th Cir. 1955) ("[a] legislative intent to change meaning will not be inferred unless such matter is clearly and indubitably manifested").

^{115/}Section 202(3) and (4) of the ERA, 42 U.S.C. § 5842(3) & (4) (Supp. V 1975), explicitly grants the Commission licensing and related regulatory authority for:

(3) Facilities used primarily for the receipt and storage of high-level radioactive wastes resulting from activities licensed under [the Atomic Energy] Act.

(4) Retrievable Surface Storage Facilities and other facilities authorized for the express purpose of subsequent long-term storage of high-level radio-

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fact that such facilities "are not now in existence but will be developed in the near future for long-term, possibly permanent storage of high-level radioactive wastes, including wastes from the licensed sector."^{116/} In light of this congressional perception of the existing technology, it is untenable to ascribe to Congress an intent to impose indirectly on the Commission, through the guise of a reporting requirement, the obligation to make a definitive safety finding on high-level radioactive waste disposal as a prerequisite to future reactor licensing.

Indeed, the entire tenor of the ERA is alien to such a conclusion. The high-level waste repository envisioned by the statute will be the subject of a licensing proceeding wholly separate from any reactor licensing proceeding, and only the federal government may be the licensee for such an activity.^{117/} Thus, the ERA reinforces the previously described individualized licensing structure of the AEA (see pp. 46-53, supra). Moreover, since high-level waste disposal activities are by statute not to be part of a civilian reactor license, it could hardly have been the intent of Congress to have the ERA construed as suggesting as a condition to such additional licensing activity that the Commission must first make definitive safety findings with respect to the matter of long-term waste disposal. Thus, a fair reading of the ERA does not undermine the validity of the decision below by the

^{115/} (Continued)
active waste generated by the [Energy Research and Development] Administration, which are not used for, or part of, research and development activities.

^{116/} S. Rep. No. 93-1252, 93d Cong., 2d Sess. 33 (1974). See also id. at 60.

^{117/} See n.115, supra.

Commission, but, instead, forcefully confirms the correctness of that result.^{118/}

- B. 'THERE IS NO BASIS IN FACT OR LAW FOR THE CLAIM THAT THE COMMISSION, IN CONSIDERING THE ISSUE OF RADIOACTIVE WASTE DISPOSAL, EITHER HAS ATTEMPTED TO INSULATE ITS ANALYSIS FROM PUBLIC AND JUDICIAL REVIEW OR HAS VIOLATED ACCEPTED PRINCIPLES OF AGENCY DECISION MAKING.

NRDC's other challenge to the Commission's decision is that it is vulnerable on appeal because of alleged inadequacies in the decision-making process. The argument rests on the combined claims that the Commission attempted to insulate its analysis from third party scrutiny (see Pet. Br. at 25-33), and that the Commission violated NEPA-related decision-making principles (see Pet. Br. at 39-43). Neither of these assertions is well taken.

1. The Commission decision below was reached after a careful and in-depth review of a complete record, which was, and is, subject to public and judicial scrutiny. The first prong of NRDC's procedural objections has in large measure already been disposed of by the foregoing discussion of the record below (see pp. 12-27, supra). Only the most strained reading of the Commission decision could lead one to conclude that it was reached without any special analysis of the safety of waste disposal (Pet. Br. at 14). Indeed, to maintain, as does NRDC, that the Commission declined to explain satisfactorily its document references (id. at 15), or to provide a more comprehensive description of contrary

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Aside from section 307, NRDC also relies on sections 203(b)(2)(B) and 204(b)(2)(B), 42 U.S.C. §§ 5843(b)(2)(B) & 5844(b)(2)(B) (Supp. V 1975) (see Pet. Br. at 36). Again, however, NRDC cannot claim that the Commission is not fully and adequately implementing these provisions. NRDC's attempt to leap from activities specifically required by Congress to activities not so specified is unsupported.

views (id. at 16), so that its so-called "bald assurances" (id. at 29) and "uncritical generalities" (id. at 32), could not be carefully scrutinized by the public, the scientific community, and the courts (id. at 30), is to overlook much of what the Commission stated and to ignore altogether the substantial record compiled below on which those statements were founded.

Certainly, there is no basis for concern that this Court will be unable to ascertain the Commission's careful analysis of the competing considerations advanced below. The decision indicates on its face both the nature of the factual inquiry undertaken by the Commission prior to ruling, and the relationship between that inquiry and the conclusions reached. Thus, the Commission noted that it had specifically reviewed the following ERDA efforts: (a) the five-volume Technical Alternatives Document, (b) progress towards completion of a generic programmatic environmental impact statement, (c) geologic site selection for a federal repository, (d) spent fuel disposal technologies, (e) waste solidification technology, and (f) interim storage site selection if temporary facilities become necessary. See R. at 519-20. In addition, with respect to work being conducted by its own staff, the Commission indicated that it had reviewed the progress made in developing criteria and regulations to be used in licensing the federal repository (R. at 520). It further noted the knowledge that it had gained as a result of recent work done by its staff in connection with the restarted environmental proceedings on fuel processing and waste management (R. at 520-21), and in connection with the recently terminated proceedings on plutonium recycle and mixed oxide fuel (R. at 521). Finally, the Commission made

specific reference to more detailed information on these and other federal government waste disposal efforts found elsewhere in the record (see id., citing R. at 790-98; see also R. at 799-804, 1210-20).

NRDC's claim of no special inquiry is, therefore, nothing more than an empty pronouncement. Similarly unconvincing is the suggestion that the decision below can be faulted for failing to explain how the Commission's inquiry, and the documentation relied upon, support the balance that was struck in denying NRDC's rulemaking petition. Indeed, we need look no further than the Commission's own language to find a precise statement of the underlying rationale. As articulated in the decision (R. at 519):

The accumulating evidence as discussed below continues to support the Commission's implicit finding of reasonable assurance that methods of safe permanent disposal of high-level wastes can be available when they are needed. Given this, and the fact that at present safe storage methods are presently available and highly likely to remain so until a permanent disposal system can be demonstrated and licensed, the Commission sees no reason to cease licensing reactors.

Significantly, NRDC nowhere denies that the evidence summarized by the Commission does in fact support the conclusion reached. Indeed, as we have heretofore demonstrated (see pp. 12-35, supra), there is no persuasive basis on which NRDC's argument could be made. Nor can it realistically be maintained, as suggested by NRDC (Pet. Br. at 15 & n.13), that the documents relied upon by the Commission were incompetent to support its "reasonable confidence" in the ultimate success of present waste disposal efforts. To be sure, as NRDC correctly observes, the referenced materials were not intended as definitive safety

assessments of the waste disposal issue; rather, they were prepared for use in environmental reviews of the waste disposal question. That fact, however, provides no basis for characterizing the documents as totally useless in making the sort of safety assessment that the Commission made below. The courts have already established that a cost-benefit analysis undertaken in the course of an environmental review can support a Commission health and safety finding. See, e.g., Citizens for Safe Power, Inc. v. NRC, 524 F.2d 1291 (D.C. Cir. 1975); Union of Concerned Scientists v. AEC, supra, 499 F.2d at 1078-79. Here, of course, the referenced information was not relied upon to support a definitive safety finding, as was the case in Citizens for Safe Power, but was, instead, looked to as an essential ingredient from which the Commission could derive reasonable confidence in the timely resolution of remaining waste disposal concerns. There is nothing remiss in such an approach.^{119/}

One further comment on NRDC's procedural objections is in order. The claim is made that the decision below omits any analysis of recent studies which cast doubt on the ultimate

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While the quantum of knowledge underlying the Commission's confidence in the ultimate availability of a satisfactory resolution is great, the standard to be met here is less stringent than the "definitive safety finding" made in individual, reactor operating license proceedings. In light of the use of environmental analyses as an acceptable means of supporting "definitive safety findings" in licensing proceedings, it follows, a fortiori, that the use of such analyses is equally acceptable in the present situation.

feasibility of waste disposal (see Pet. Br. at 16-19).^{120/} However, NRDC's own discussion undermines this argument, for it specifically makes reference to two staff documents which were before the Commission at the time of decision (see R. at 523-823 and 4512-35). While both studies indicate that some uncertainties still remain with respect to the waste disposal issue, the limited caveats raised in these staff documents are reflected in the decision.^{121/} There is thus no legitimacy to the charge that an effort was made below to submerge evidence contrary to the end

^{120/} NRDC also claims that the Commission decision omits any analysis of past government failures (see Pet. Br. at 16). We have already noted the error in NRDC's characterization of the past regulatory programs (see pp. 20-27, supra). There is, in any event, little need to engage in prolonged discussion on this point, since the decision below, and the record on which it is based, make it clear that the matter was adequately considered. Thus, the Commission states that as early as 1959, Congress was made aware that the waste disposal problem had not been solved and that several years of research and testing would be required (see R. at 513). The decision further notes that during hearings in 1973 and 1974, the Commission described existing proposals for long-term waste management and disposal, i.e., the "past government failures" referred to by NRDC, but made no claim that methods for permanent disposal had been developed (see R. at 515). In addition, the record compiled before the Commission includes a chronology of past waste disposal efforts (see R. at 799-804), as well as a detailed description and analysis of high-level liquid waste tank storage at military facilities (see R. at 805-12).

^{121/} The record also contains a painstaking effort by the staff to respond on a point-by-point basis to lengthy comments received on its environmental assessment of the waste disposal question, including those of NRDC. See R. at 840-970. In view of this effort, the charge that the Commission has sought to insulate its decision-making process from public scrutiny is particularly unpersuasive.

result.^{122/} Compare Greater Boston Television Corp. v. FCC, 444 F.2d 841, 851 (D.C. Cir. 1970), cert. denied, 403 U.S. 923 (1971).

Nor is this assessment undermined in any respect by two more recent studies which, as NRDC notes, were not dealt with in the Commission's analysis (see Pet. Br. at 18-19 & nn.15-16). Neither of these studies had yet been released at the time the decision was issued, and, therefore, they understandably were not reflected therein.^{123/} We would observe in passing, however,

^{122/} The Commission's characterization of the technical record, as reflected in its decision, is both accurate and precise. The decision states (R. at 519):

The technology for disposal is reasonably available, and the studies done to date, while not conclusive, are nevertheless promising for timely and safe implementation of the technology.

With respect to the political problems anticipated by some observers, the Commission, there too, was under no misapprehensions. On this point its decision states (R. at 522):

Beyond this, the selection and demonstration of an actual disposal site will likely be highly controversial, and a strong and continued national commitment to "get the job done" will likely be necessary. We see in the recent statements and actions of the Executive Branch regarding nuclear power and national energy policy, a firm commitment to carry through to completion a comprehensive high-level waste management program. Further, the Commission fully intends to press for vigorous pursuit of programs aimed at developing and implementing sound and timely arrangements for high-level waste disposal.

^{123/} NRDC's reliance on two post-opinion reports to cast doubt on the Commission's decision is contrary to the principles announced in FPC v. Transcontinental Gas Corp., 423 U.S. 326, 331-32 (1976).

that nothing contained in these subsequent studies provides any reason to suspect that, had they earlier been available, the result reached below would have been different.^{124/} Neither study recommends a moratorium on further licensing pending a definitive waste disposal finding. At best, the two studies reflect the already referenced uncertainties still remaining in the waste disposal program. However, there is no suggestion that the studies contain "available facts of significance going beyond those reflected in the record." Citizens for Safe Power, Inc. v. NRC, supra, 524 F.2d at 1297.

In such circumstances, the judgment of the Commission remains sound, and does not even lend itself to second-guessing by the courts. See id.; Union of Concerned Scientists v. AEC, supra, 499 F.2d at 1086; North Anna Environmental Coalition v. NRC, supra, 533 F.2d at 665. To the contrary, there is ample evidentiary support for the Commission's reasonable confidence as to the ability of this country safely to dispose of high-level radioactive wastes when it becomes necessary to do so. That is a sufficient predicate for declining to entertain NRDC's rulemaking petition, especially in light of the careful consideration that Congress continues to give to the waste disposal issue, and the

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NRDC seems to find support for its position in the conclusions of the Willrich Report (see Pet. Br. at 17 & n.14). However, as has been noted previously (see p. 27, supra), the conclusion of Willrich is that the present ERDA program "now appears calculated to * * * demonstrat[e] that there are solutions to the long-term radioactive waste management problem." Indeed, the recommendation of Willrich is not to halt licensing of nuclear power plants, as NRDC seeks to do, but to establish an independent waste management authority to deal with high-level radioactive waste material. Congress is presently considering this suggestion. See H. R. 9499, 95th Cong., 1st Sess. (1977) (Mathias-Jeffords).

fact that there exists no statutory or regulatory mandate that the Commission undertake such an assignment as a function of its rulemaking authority or as an aspect of licensing power reactor facilities.

2. The Commission decision below was reached in a manner fully consistent with the goals and procedures of NEPA. As a final argument for upsetting the Commission's conclusion, NRDC submits that the Commission can somehow be faulted for violating NEPA-related decision-making principles. This contention is also wide of the mark and must be rejected.^{125/}

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The California Energy Commission makes the somewhat different argument that Section 102(1), 42 U.S.C. § 4332(1), requires the Commission to make the requested safety finding (see Amicus Br. at 16-17). Support for this position is purportedly found in an excerpt from NRDC v. SEC, 389 F. Supp. 689, 695 (D.D.C. 1974). However, the California Energy Commission misquotes the referenced case. The language of the district court deleted by the California Energy Commission indicates that the court there was speaking about "the procedural requirements of NEPA § 102" and, in particular, about Section 102(2)(F) -- not about any substantive mandate dictated by Section 102(1), as the misquoted fragment implies. Indeed, the holding of that case is that the SEC failed to give sufficient notice of its rulemaking proceeding (see 389 F. Supp. at 699-700), and failed to provide an adequate statement of the basis and purpose of its rule (see id. at 701-02), all in violation of the Administrative Procedure Act (see id. at 702).

That this is the correct reading of the court's holding is confirmed by the decision following remand to the SEC. NRDC argued on the basis of Section 102(1) that the promulgated rules were still inadequate. The court responded to this position by explicitly stating that NEPA, and in particular Section 102(1), imposed no substantive obligations on the SEC. See NRDC v. SEC, 432 F. Supp. 1190, 1197-98 (D.D.C. 1977). Thus, the California Energy Commission's argument here was rejected by the very court it claims adopted that position. This result is consistent with a broad body of judicial precedent. See, e.g., Gage v. AEC, 479 F.2d 1214, 1220 n.19 (D.C. Cir. 1973) ("NEPA does not mandate action which goes beyond the agency's organic jurisdiction"); Iowa Citizens for Environmental Quality v. Volpe, 487 F.2d 849, 851 (8th Cir. 1973); Environmental Defense Fund v. Corps of Engineers (Tennessee-Tombigbee Waterway), 348 F. Supp. 916, 927 (N.D. Miss. 1972), aff'd, 492 F.2d 1123 (5th Cir. 1974).

NRDC's basic position is that under NEPA an agency must consider indirect or second order effects, and, therefore, cannot limit its environmental review to the immediate site boundaries of a project. So far as that statement goes, Intervenor has little objection. In fact, consistent with that principle, the Commission presently is conducting additional environmental hearings on the impact of radioactive waste disposal (see p. 40 & n.94, supra). NRDC does not argue in this Court that this environmental review either is too limited in scope or is following inappropriate procedures. Nor does it take issue here with the ongoing efforts being undertaken by DOE (formerly ERDA) toward developing a generic, programmatic environmental impact statement on its waste disposal program prior to seeking a license from the Commission for any facility it may desire to construct (see p. 25 & n.60, supra).^{126/}

Rather, even in the face of these ongoing and anticipated environmental reviews, NRDC seeks an additional proceeding to assess the impact of waste disposal, the nature of which would be a safety finding under the AEA. The statutory basis for this safety review, so we are told, is NEPA (see Pet. Br. at 39-43); yet, nowhere does NRDC explain how it arrived at its conclusion that the cases it cites, all of which arose under NEPA, are "clearly relevant to the interpretation of the AEA" (id. at 40).

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Early work on such a statement is entirely consistent with numerous court decisions. See, e.g., Scientists' Institute for Public Information, Inc. v. AEC, 481 F.2d 1079, 1086-87, 1094 (D.C. Cir. 1973). Moreover, both DOE and the Commission have confirmed their intent to issue a further environmental impact statement on each specific facility for which a license is sought. See 1976 Hearings, supra n.21, at 130-31, 136 (testimony of Dr. Liverman, ERDA).

Relevant case law establishes the opposite,^{127/} and with good reason. The NEPA cases confirm that an agency must assess future impacts that may follow from a proposed course of conduct (see Pet. Br. at 42-43). However, NEPA understandably does not require that a particular decision be reached, but only that all factors be fully explored.^{128/} Thus, with respect to waste

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The court in Union of Concerned Scientists v. AEC, *supra*, laid down the applicable rule. It was therein stated (499 F.2d at 1078-79; emphasis added):

NEPA and the Atomic Energy Act are two separate statutes, however, and while a lesser scrutiny of environmental issues is inherently inconsistent with consideration to the fullest extent possible, lesser scrutiny of non-environmental matters in an operating license proceeding need not logically be a similar infirmity under a distinct statute.

The NRDC citation from Citizens for Safe Power, Inc. v. NRC, *supra*, is especially misleading. There the claim being made was that the health and safety findings rendered by the Commission were insufficient because they relied on an environmental assessment made pursuant to NEPA. The court rejected the proffered argument. As we have already noted (see pp. 58-59, *supra*), the holding in Citizens for Safe Power disposes of NRDC's claim that environmental assessments cannot be used to support the Commission's decision here. In the course of its opinion the court rejected the position that the health and safety findings had to be made pursuant to "safety" hearings and not as part of the Commission's "environmental" hearings. It was in this context that the portion of the opinion cited by NRDC was rendered. Obviously, language used in connection with procedural issues cannot be read to imply that NEPA engrafts additional substantive obligations onto the AEA. Such a reading would be inconsistent with the court's prior holding in Union of Concerned Scientists, which was not called into question by the opinion in Citizens for Safe Power.

^{128/}

See, e.g., Scenic Hudson Preservation Conference v. FPC, 453 F.2d 463, 481 (2d Cir. 1971), *cert. denied*, 407 U.S. 926 (1972); East 63rd Street Association v. Coleman, 414 F. Supp. 1318, 1322 n.7 (S.D.N.Y. 1976).

disposal, the Commission can make the required NEPA assessment prior to reactor licensing on the basis of the information available to it, and, indeed, as just indicated, it is in the process of doing so.

But, under the AEA, the nature of the definitive safety finding ultimately to be made is vastly different from the environmental assessments called for under NEPA. As has been noted previously (see pp. 51-52, supra), for the Commission to have the sort of comprehensive evaluation available to it to make a definitive safety finding, the appropriate source to look to is the applicant seeking authorization to construct and operate a federal repository. It would be stretching NEPA well beyond its recognized limits to suggest that the broad environmental assessment contemplated by Congress under that statutory scheme requires reading into the AEA the requirement for a definitive assessment at this time of all the detailed safety aspects relating to the disposal of high-level radioactive waste.

Had Congress intended such a result, it certainly had ample opportunity to require the Commission to assume such a responsibility. It has, however, thus far declined to issue such a statutory directive, despite urgings that it do so. And, its most recent action with regard to this matter in enacting the ERA makes it clear that Congress continues to believe the proper time and occasion for such a definitive safety evaluation is upon the filing by the government of an application seeking Commission approval of a federal waste disposal repository (see pp. 54-56, supra). The effort by NRDC to achieve a different result by an overly elastic interpretation of NEPA is simply irreconcilable with

the consistent and detailed legislative history outlined above. It would require precisely the sort of judicial legislation which has time and again been decried as wholly inappropriate by the courts. See, e.g., Federal Maritime Comm'n v. Seatrain Lines, Inc., 411 U.S. 726, 744-45 (1973); United States v. Republic Steel Corp., 362 U.S. 482, 510 (1960) (Harlan, Frankfurter, Whittaker & Stewart, JJ., dissenting).

C. THE MORATORIUM ON NUCLEAR PLANT LICENSING REQUESTED BY NRDC IS NOT JUSTIFIED BY THE FACTS OF THIS CASE, AND IF ORDERED BY THIS COURT, WOULD BE CONTRARY TO THE PUBLIC INTEREST.

The previous sections of this Brief demonstrate that this Court should deny NRDC's review petition in its entirety. This is especially true insofar as the Court has been requested to take the drastic measure of ordering an interim moratorium on the further licensing of nuclear power plants. The present inventory of nuclear wastes in this country is almost entirely the result of military programs (see pp. 9-10, 20-21, supra). A halt in the licensing of additional commercial power reactors will not eliminate the nuclear wastes generated for military purposes. Nor would such action resolve any issues relating to the disposal of wastes associated with commercial power reactors already licensed. Finally, even assuming arguendo that there had existed some reason for faulting the decision below (which there is not), the wastes that might be attributable to new power reactors licensed during the pendency of any remanded rulemaking proceeding will be inconsequential in amount when compared to the volume of wastes already generated. In this regard, the explicit finding by the Commission that "a halt in licensing of nuclear power

plants is not required to protect public health and safety" (R. at 509) deserves special emphasis. Such a finding, directed as it is to the matter of interim relief, is to be sustained "if it 'appears from the whole case and the reasons stated that the (agency) action is supported by reason'." Nader v. NRC, 513 F.2d 1045, 1055 (D.C. Cir. 1975).

Not even NRDC has offered a cogent argument suggesting that this aspect of the Commission's decision is unreasonable. Nor could it have in light of the minimal impact on the overall waste disposal issue that the continued licensing of power plants would have during the period in question. When this impact is measured against the substantial increases in economic, social and environmental costs that would undoubtedly result from a moratorium -- as reflected in the assessment prepared by the staff of the Commission in connection with the restarted environmental hearings on waste disposal^{129/} -- it is abundantly clear that public interest concerns weigh heavily against the granting of any sort of moratorium on the licensing of power reactors. The facile suggestion by NRDC to the contrary, without so much as paying lip-service to the serious consequences that would inevitably follow if a moratorium were declared, is inexcusable, and should be rejected outright by this Court.

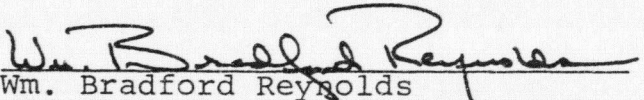
^{129/}

See Nuclear Regulatory Commission, Impacts of Later Reversing a Decision to Adopt or Not to Adopt an Interim Rule Permitting Construction or Operation of Nuclear Power Plants (October 1976). See also 41 Fed. Reg. 45851 (Oct. 18, 1976).

VI. Conclusion

For all the foregoing reasons, Intervenor respectfully submit that NRDC's petition for review should be dismissed in all respects.

Respectfully submitted,


Wm. Bradford Reynolds

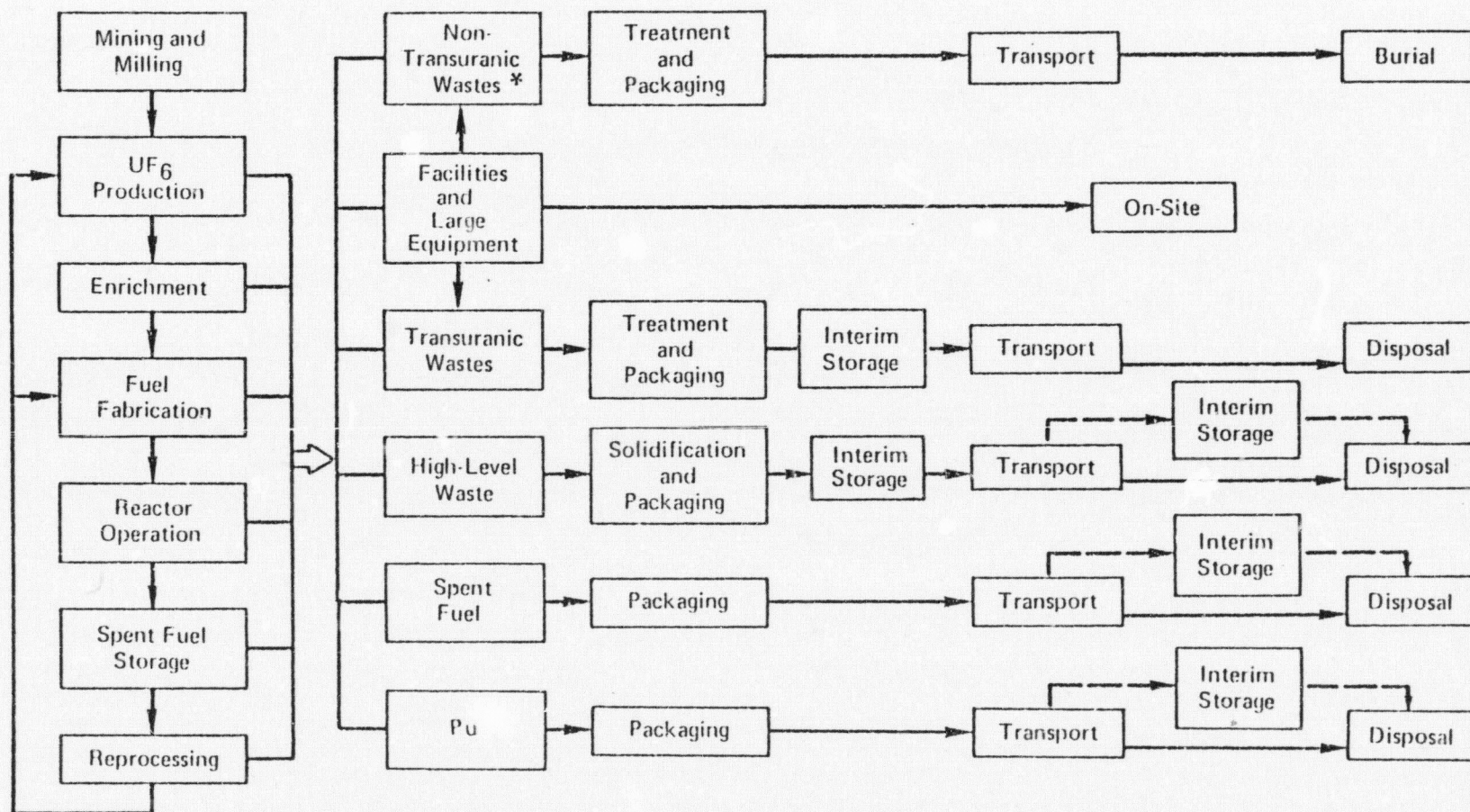
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Dated: January 13, 1978





* Low-Level Wastes

FIGURE 1 - WASTE MANAGEMENT FLOW DIAGRAM

(R. at 538)

IN THE
UNITED STATES COURT OF APPEALS
FOR THE SECOND CIRCUIT

NATURAL RESOURCES DEFENSE COUNCIL, INC.,	)	
	)	
Petitioner,	)	
	)	
v.	)	
	)	
UNITED STATES NUCLEAR REGULATORY COMMISSION	)	
and UNITED STATES OF AMERICA,	)	No. 77-4157
	)	
Respondents,	)	
	)	
POWER AUTHORITY OF THE STATE OF NEW YORK,	)	
et al., AMERICAN ELECTRIC POWER COMPANY,	)	
et al., BOSTON EDISON COMPANY, et al.,	)	
PENNSYLVANIA POWER & LIGHT COMPANY,	)	
	)	
Intervenors.	)	

CERTIFICATE OF SERVICE

I hereby certify that on this 13th day of January, 1978, I served the foregoing document entitled "Consolidated Brief of Certain of the Intervenors Opposing NRDC Review Petition" by depositing two copies thereof in the United States mail, first class postage prepaid, and addressed to the following persons:

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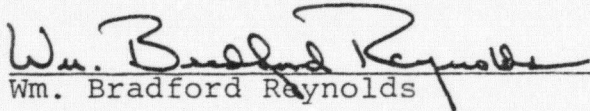
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